The Driller
FEBRUARY, 1958

"Twice as much hole with 1-W rotary"

. . . agree Tom Helvie & Sons Marion, Indiana

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Purchased! "When we first bought the new Bucyrus-Erie rotary attachment for our 1-W, we tried it out in the yard, drilling a 60-ft. practice hole. It worked beautifully, even though we were inexperienced in using rotary." — Tom Helvie, Sr.

Proved! "It's easy and fast to operate. It actually takes two men to operate this 1-W with the rotary attachment: you put down hole so fast that you're continually adding drill stem to keep up with your progress." — Jim Helvie.

"This rotary is really *the* thing. We drill twice as much hole with it as we did before with two rigs." — Tom Helvie, Jr.

Satisfied! "We're sure completely sold on the rotary attachment." — Tom, Sr.

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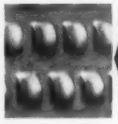

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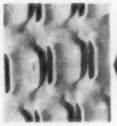

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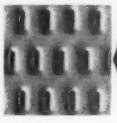

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PLAIN END
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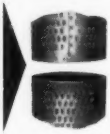

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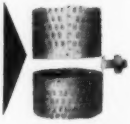

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write for our complete well casing catalog . . . FREE

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TPS-1

The Driller

South Milwaukee, Wisconsin

Vol. 32 No. 2

February 1958

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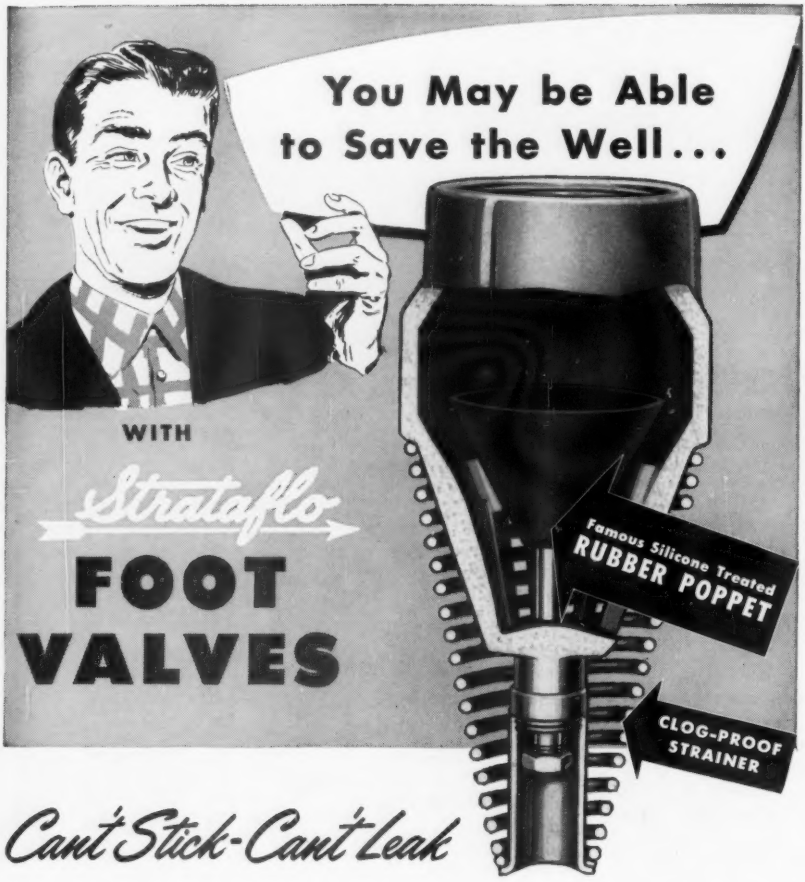

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WHEN WATER supply is failing, you may save the well by installing a Strataflo Foot Valve. It can't stick, can't leak, and the springwire brass strainer can't clog or corrode. It is very sensitive and has no springs. Strataflo Foot Valves increase flow, save wear and tear on the pump . . . and save their cost in service calls. Ideal for jet-type pumps.

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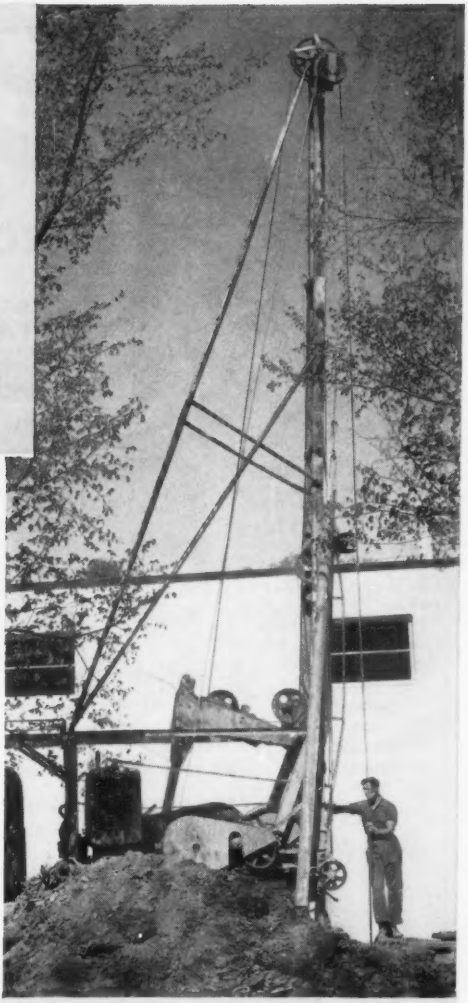

That's what Wayne Ferguson, water well driller at Allison Park, Pa., wants. He goes on to say, "You've got to have a rope with spring in it . . . a rope that will keep its life and action. If you have no action, you don't drill. This MOR-SPRING line has been on the rig for 2½ years and has drilled about 2,000 feet of hole. It's one of the best ropes we ever used."

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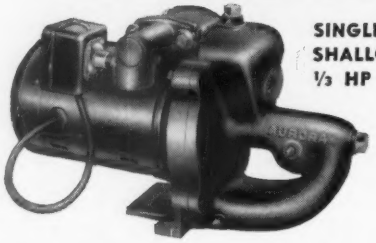

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4★ **PACKAGE UNITS** — both ⅓ HP and ½ HP.

5★ **NEMA STANDARD** — threaded stainless steel shaft — large 56 frame motor.

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WRITE FOR

BULLETIN 133-SL

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?

Read why:

Because the picture just wouldn't have meant anything.
Because almost all flexible plastic pipe *looks* the same.
Because you know yourself that looks can be mighty deceiving and jobs that go wrong can be mighty expensive.
Just be sure that the pipe you use is made by a reputable manufacturer who has had *real experience* in the field.

There are dozens of brands of flexible plastic pipe on the market—good, bad and indifferent. Inferior pipe, often "bargain priced," can cost you plenty in replacement and repair costs—and in good will lost. Read the facts below about Supplex—and bear them in mind next time you're in the market.

WHO makes it? Supplex pipe combines the experience and integrity of two of the industry's greatest names: American Hard Rubber Company, founded in 1852, is noted for plastic piping made to the strictest requirements of precision industries—and the Supplex Company division adds advanced techniques in production and quality control.

WHAT about use for drinking water? Supplex Plastic Pipe bearing the NSF Seal is certified safe for drinking water by National Sanitation Foundation, Ann Arbor, Michigan.

WHERE do I use it? For wells and farm water systems. For construction job water lines, industrial piping, mine drainage systems. For lawn and golf course sprinklers...recirculating water lines in air-conditioning.

HOW does it come? Six diameters – each in two different lengths. Uniquely packaged to prevent damage in transit. And remember: American Hard Rubber Company *also* makes 8 other types of plastic pipe!

WHICH fittings and clamps? Complete line – made of high-impact virgin polystyrene. NSF approved. All stainless steel clamps. Screwdriver and jackknife are the only tools you need.

WHEN don't I use it? We do not recommend Supplex Plastic Pipe for use with temperatures higher than 125° F. nor jet wells deeper than 125 ft. Make American Hard Rubber your *one* source of supply for all types of plastic pipe – the right pipe for the job.

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Made of VIRGIN POLYETHYLENE

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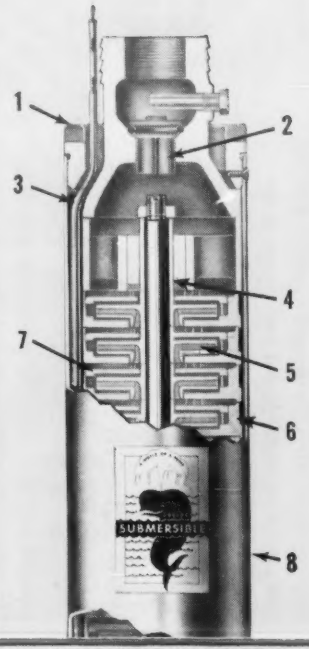
Avoid service delays—and high repair costs

10 of the features that mean long, dependable performance . . . and easy service in the field

1 Sturdy threaded Retaining Collar—easily removed with wrenches.

2 O-Ring Poppet Type Check Valve—will not leak or stick. Easily removable to check rotation without dismantling pump.

3 Protected Motor Leads—located in machined passageways inside pump casing. Cannot be damaged in installation.



Use SUBS you can fix fast *in the field*

It takes a lot of "trouble" to make a Goulds submersible stop working. But such things as sand and lightning can damage *any* submersible.

In such cases the best you can do is to get the pump working again fast . . . *before* you lose customer good will and profits.

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5 Cast, one-piece Bronze Impellers—dynamically balanced individually—interchangeable.

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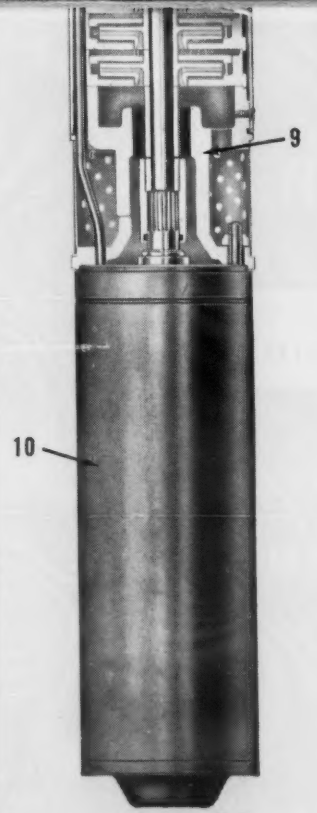
7 Bronze Interstage Cover Plates—accurately machined, identical, interchangeable.

8 Stainless Steel Casing—extra strength permits leakproof assembly without gaskets. Ample clearance permits removal of pump parts.

9 Heavy Bronze Motor Adapter—maintains positive alignment. Fits any NEMA standard submersible motor.

10 Motor—highest quality submersible motor conforming to NEMA standards. As on all Goulds pumps . . . *safe motor loads.*



No special tools are needed to dismantle the pump. With wrenches, screw driver, a pair of pliers, you're ready to fix whatever has been damaged. Ready to satisfy your customer fast. Step-by-step instructions are provided with every pump.

Goulds series UA submersibles are ideal for wells 4″ and larger. Their bronze and stainless steel construction resists rust and corrosion inside and out. They're available in 8 sizes in three groups, ⅓ through 3 HP. Maximum depths to 860 ft.; capacities to 1170 GPH.

For more information, get in touch with your Goulds distributor or write Goulds Pumps, Inc., Seneca Falls, N. Y. for Bulletin.

Submersible

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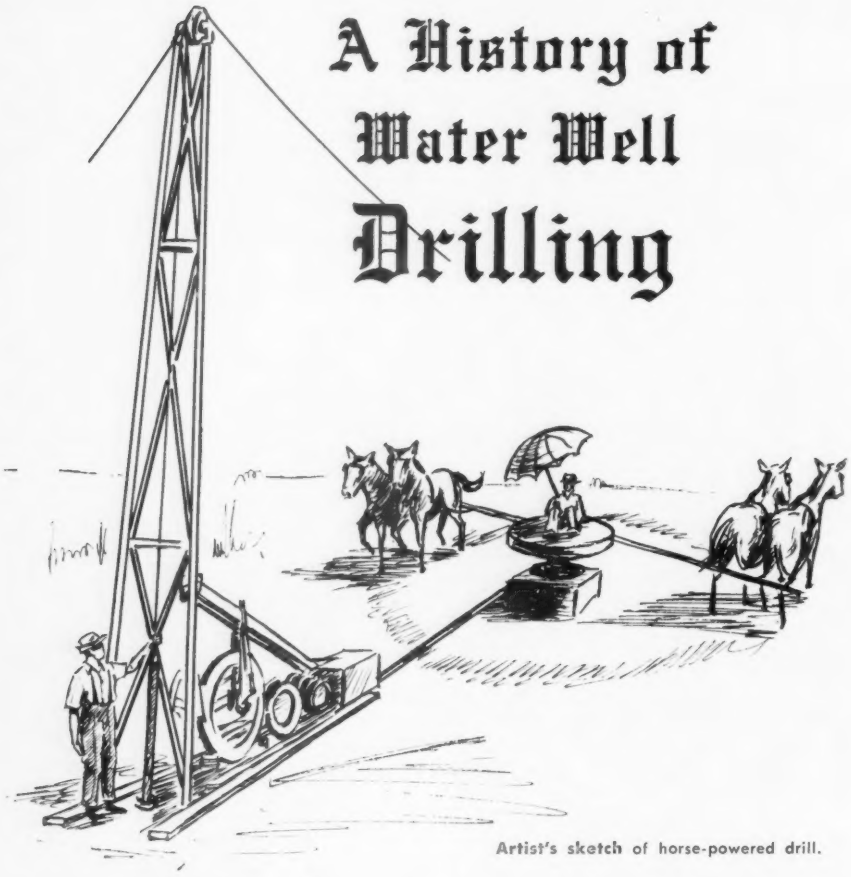
A History of Water Well Drilling



Artist's sketch of horse-powered drill.

Since the beginning of time, man has sought methods of bringing water up from under the ground.

EDITOR'S NOTE: *Material for this article is taken from "Water Well Drilling with Cable Tools", recently published by Bucyrus-Erie Co. The author of the book, Raymond W. Gordon, is widely known throughout the industry as an expert on cable tool drilling methods.* *See review of this new book on page 28.*

FROM earliest times, man's existence has been dependent upon water. Every early civilization — Mesopotamia, China, Egypt, India, Greece, Rome, even the tribal states of the New World—centered around sources of this life-giving liquid. In these hot, populous areas, so often parched by drought, water was precious. No wonder, then, that the village well, the oasis in a desert, became a focal point for human activity.

No one knows where the first well was made; it may have been a shallow

depression in the earth, scooped out by the bare hands of a primitive man. Yet, of all the ancient structures in existence today, water wells are the best preserved.

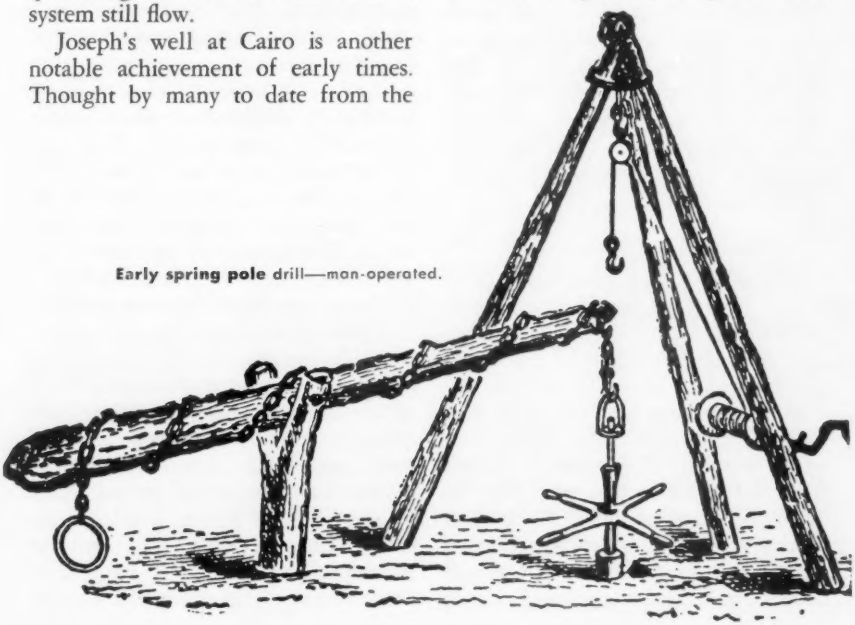
Some Famous Wells

Through the years, surface structures, exposed to the ravages of nature and the destructiveness of man, have crumbled and disappeared, but wells dug out of solid rock deep beneath the ground line not only have outlasted, but have outperformed them as well. One of the most famous of these is Jacob's well, cut from solid rock over 3,500 years ago. This well was estimated in the 7th century to be 240 feet deep, but recent measurements show that it is now less than a third of that. At this well, Jesus requested the woman of Samaria to draw Him drink, and in certain seasons the thirst-quenching waters from this ancient system still flow.

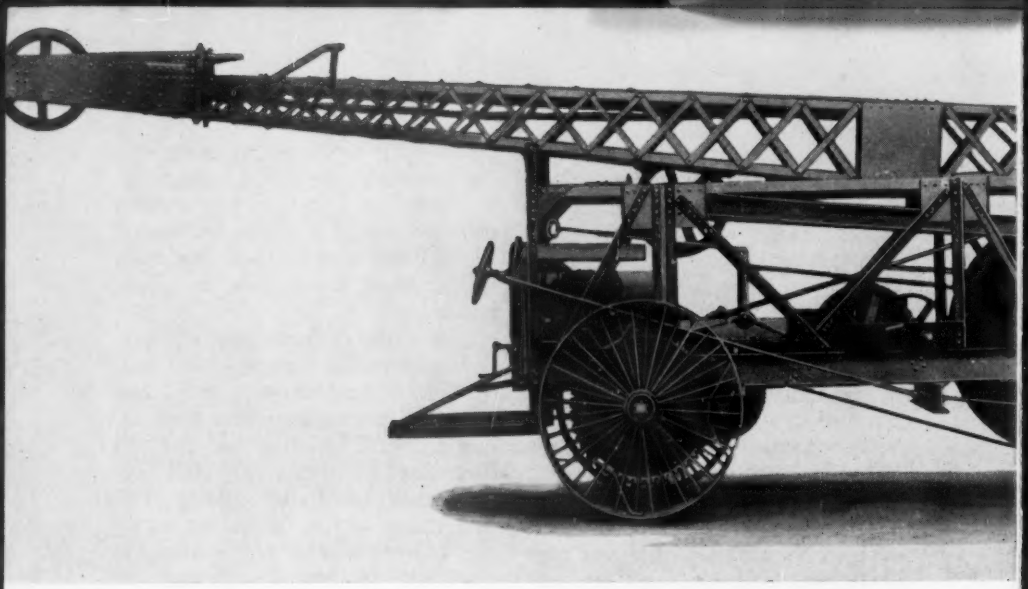
Joseph's well at Cairo is another notable achievement of early times. Thought by many to date from the pyramids, it was built in two steps: the first was an 18 x 24-ft. shaft sunk to a depth of 165 feet with a spiral path cut around its walls; the second was an offset shaft 130 feet deep, from which water is obtained by chain buckets.

While history relates that the early Egyptians used a type of crown drill with fixed teeth of gem stones and quartz to grind rock beds, records indicate that the Chinese and Persians constructed wells as early as 2000 B.C. by methods other than digging. Persian kanats, among others, are examples of extraordinary engineering and planning. Its origin unknown, the kanat consisted of a shaft sunk to relatively shallow depths from which laterals penetrated the water-bearing deposits.

It was probably about the time of Confucius (600 B.C.) that the Chinese, using the principle of free-



Early spring pole drill—man-operated.

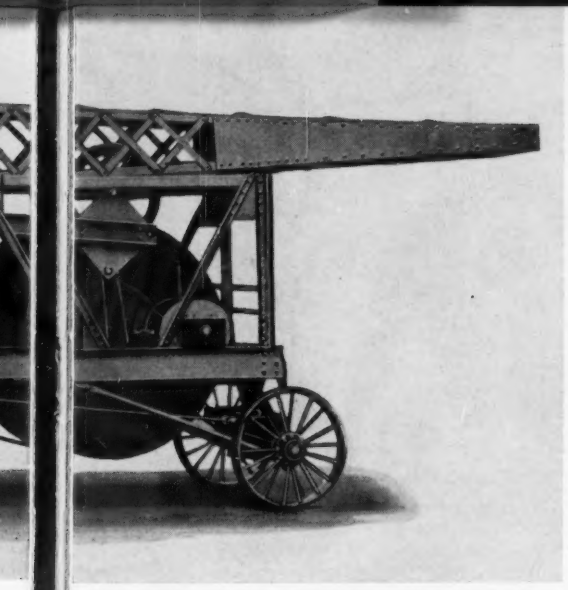


One of the first all-steel cable tool drills built by the Armstrong Mfg. Co.

falling weights, constructed and used the first-known percussion drill. Their invention of a spring pole enabled them to work into the ground a chisel bit attached to lengths of bamboo. Though it may have taken generations to sink a single well, depths as great as 1,800 feet were reached by this method. This was the only major advance in water well drilling within a period of 5,000 years, but there is no indication that its use ever spread to western Europe.

The Oldest European Well

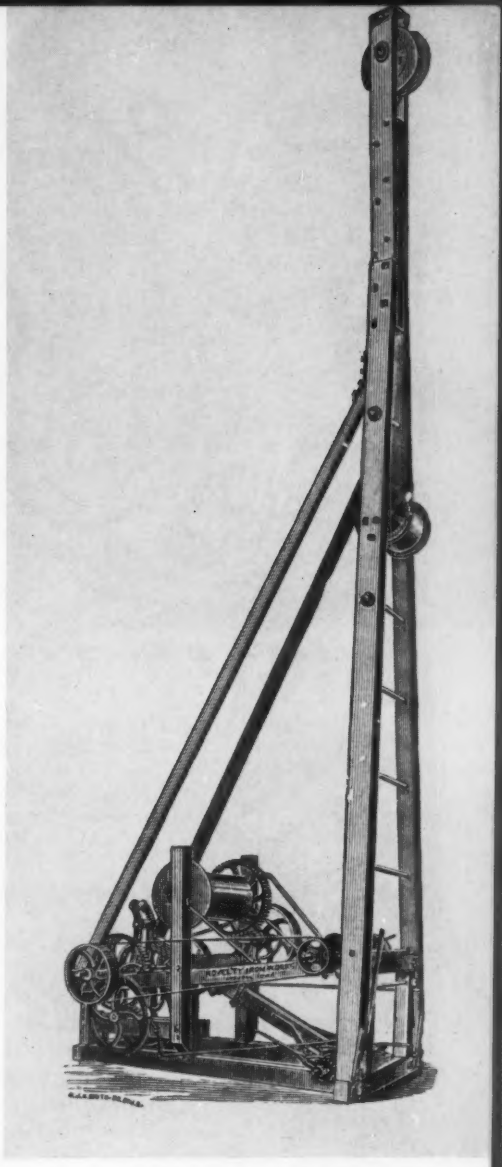
One of the oldest European drilled wells is located in northern France in the province formerly known as Artois near the present village of Lilliers. It was drilled in 1126 A.D. and has had a continuous flow of water from that time to the present. The word "artesian", meaning "flowing well", comes from the name of this province. In 1818 the Department of Agriculture of the French government appropriated money for drilling wells to beds of artesian water which were believed to lie deep beneath the city of Paris. Work was begun in 1832 with a specially-designed drilling outfit consisting of wrought iron bits 8 to 40 inches in diameter suspended on jointed wooden rods. The "tool string" was raised and dropped by a windlass operated by man or horsepower. By this method a 1,780-ft. well was finished in 1842; it produced an artesian flow of 800,000 gallons per day. Thus, little improvement in water well drilling practices was accomplished until the European advances mentioned above. Even then, and for many years afterward, progress and use of existing improvements were almost at a standstill because the work was not understood. So inadequate were tools of that day that many insurmountable fishing problems arose, resulting in the abandonment of scores of wells before they were completed. Consequently, the general development of ground water by means of wells remained in its infancy as long as 200 years after the American colonies were first settled. Some of the greatest advances were to



Right—the first portable drill.

be made by American inventors.

One of the first wells drilled in the United States was at Buffalo Lick, W. Va., in 1807. Two brothers, David and Joseph Ruffner, had been gathering a reddish salt brine from swampy land near the Kanawha River. They boiled this brine down into salt and peddled it around that area. The quality of brine oozing to the surface did not satisfy the brothers, however, so they decided to try drilling down to bedrock for a purer source. Using a spring pole which they devised by their own ingenuity, they sank a hollow sycamore, 15 feet long and four feet across on the inside, into the dark marsh. Their tool string, made up specially by a local blacksmith, consisted of jointed iron rods and a chisel bit, worked into the ground as the brothers threw their weight alternately onto the spring pole. The project was completed after much tribulation on January 15, 1808, and the success of this 58-ft. well established the spring-pole drill in the salt mining industry of that day.



These early drills were all operated by man or horsepower. By 1830, though, the steam engine was adapted to drilling machines and the "standard rig" made its appearance. It was, and is, characterized by its four-legged

(Continued on page 50)

Carl Pelzer (R) stops at job site to check progress on a well being drilled with the 20-W. His son, Jim, a college student, helps out during vacations.

He Wanted a Change

In hopes of finding independence, Carl Pelzer decided to quit the work he had done for 17 years to start his own drilling business. He found independence and financial security, too.

WHEN Carl Pelzer decided to quit a well-paying job two years ago as an engineer with a construction de-watering firm in Hammond, Ind., he didn't know exactly what sort of business he wanted to go into. He did know, however, that the de-watering work, which he had been doing for more than 17 years, required him to be away from home a good deal of the time. He felt that his wife and six children deserved more of his time than they had been getting.

Game to try anything that would provide him with the independence he sought, young-looking, crew-cut, 40-year-old Pelzer bought a cocktail lounge and restaurant in North Riverside, Ill., a suburb of Chicago. In spite of his total lack of experience in a venture of this sort, the business thrived. But before long, Pelzer began to yearn for work which would permit him to spend more time outdoors. He thought water well drilling might be the answer.

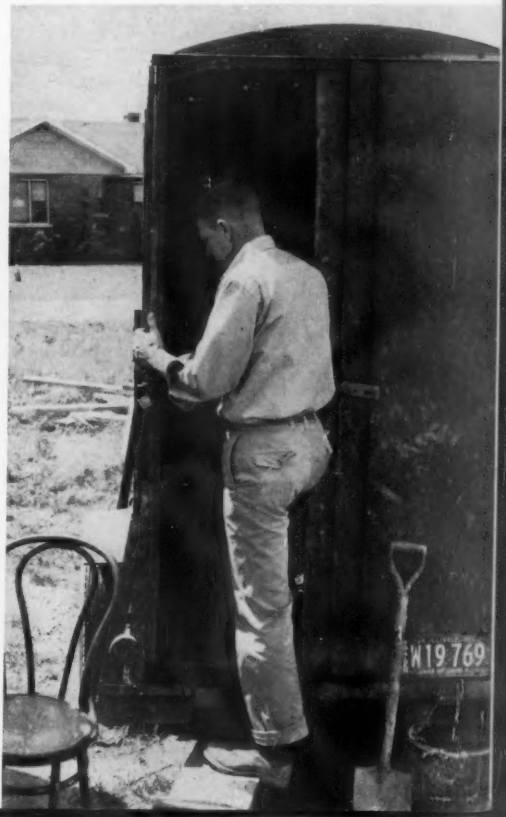
With his characteristic knack for making snap decisions, he formed the

Ground Water Engineering Co. in August of 1956 and bought a Bucyrus-Erie 20-W drill. He didn't have a job lined up for the rig when he brought it home to his yard in North Riverside; didn't even know how to go about drilling a well. He read the instruction booklets that accompanied the drill, which is mounted on a '54 Ford, 1½-ton truck, and began drilling practice hole in his back yard.

Later that week, Pelzer's 12-year-old son, John, came home from school with the report that he had told his teacher about his dad starting in the water well drilling business. By coincidence, the teacher was building a new house and needed a well, so he requested that Pelzer contact him. Pelzer called the teacher and landed his first water well job.

Jacks are attached to drill frame, held up out of way with chains when not used.

Pelzer and his men find this doghouse handy for tool storage, shelter, etc.



Encounters Trouble

With his sons, Jerry, 17, and Jim, 19, acting as helpers, Pelzer began drilling the well. "Believe me," he chuckled, "everything imaginable went wrong on that job. We were down about 70 or 80 feet with a 4-in. tool string when we started having trouble with heaving sand. We kept losing the hole and had to bail continuously. Then we tore the bailer line. I had been letting the cable follow the bailer down the hole too fast and it got snarled up on the drum and snapped. I learned fast that there's more to water well drilling than just buying a drill.

"Then we hit limestone. I wasn't using jars, and tools kept on hanging up in the hole. Everything seemed to be going wrong. It took us somewhere around eight days to complete that well; it finally bottomed at 100 feet. I knew that I could never make any money in the drilling business with

that kind of production," he recalled. "But I didn't get a bit discouraged," he hastened to add. "I figured that we had to expect to run into difficulties; after all, this was something brand-spanking-new to us. I knew that as we gained more experience, things would have to start getting better."

And start getting better they did. As Pelzer learned more and more about well drilling through experience, footage production improved.

One move he made which he claims was a major factor in his learning a lot about drilling in a hurry was the hiring of seasoned driller Richard Horn. With 48 years of drilling experience in Kentucky, Tennessee and Michigan, 69-year-old Horn was able to handle just about any drilling problem that could possibly arise. And some of his knowledge inevitably had to rub off on Pelzer. That's exactly what happened. But Pelzer is the first to admit that he is a relative greenhorn compared to most drillers, qualifying this with the remark that he is, nevertheless, learning fast.

Pelzer had been in business just one year when visited by *The Driller* in August. During that time, he had drilled 35 wells with the 20-W and had used it to set submergible pumps on 30 of them. He had also salvaged pipe from six abandoned wells.

That's quite a record for a beginner, especially in view of the fact that he had run into a month of extremely cold and another month of almost continuously rainy weather. "I've had the 20-W for just a year now," Pelzer commented, "and I've never had an ounce of trouble with it. That's one of the reasons I'm buying a new 22-W. If it gives me the excellent service I've received from the 20-W, I'll be more than happy."

At the time of *The Driller's* visit, the 20-W, with Richard Horn at the controls and Pelzer's 19-year-old son Jim acting as helper, was down 130 feet on its 36th well. The well, four inches in diameter, was being drilled

Pelzer's 19-year-old son Jim, removes pipe driving clamp from tool string.

Immediately after taking delivery of a new 22-W, Pelzer (L) and driller Richard Horn pose with new rig. It was second drill Pelzer had bought within a year.

to furnish a water supply for a North Riverside home.

Pelzer was eagerly awaiting delivery of the new 22-W, which he planned to mount on a 1½-ton, Ford F-500, cab-over-engine truck. He had a considerable number of well jobs already lined up for the new drill, so he was anxious to put it to work.

Equipment Listed

Other equipment includes a 105 cubic foot Gardner-Denver air compressor; a Jackson electric generator, which provides a source of light for after-dark drilling; and a 1950 Ford ¾-ton pickup truck, in back of which is mounted a 250-gal. water tank.

A 4 x 8 x 7-ft. doghouse which Pelzer built and mounted on a 2-wheel trailer was originally intended solely for use during the cold winter months. But it has proven so handy for shelter during inclement weather and for storage of tools, etc., that it is now taken out on every well job.

Behind Pelzer's home is a 30 x 40-ft. storage building, which contains welding equipment, tools etc. But he is looking for a suitable location for erecting a new, larger building which can serve as a showroom, office and storage and servicing area.

Most of the wells Pelzer drills are four and five inches in diameter. They are almost all for homes in the North Riverside and Chicago area, but he accepts well jobs within a 25-mi. radius of his home. He generally helps driller Richard Horn get set up on a job with the 20-W, then lets him drill alone, checking drilling progress with him periodically.

Ground formations in the area are fairly uniform. The drill tools generally pass through around 40 feet of firm clay, 30 feet of silt and clay, then 20 to 40 feet of sand and gravel, which is followed by limestone formation. The limestone is usually penetrated anywhere from 15 to 50 feet, where an ample water supply can generally be found. Ground conditions for individual wells, of course, vary somewhat. Average completion

(Continued on page 48)

Your Federal Income Tax:

Depreciation Allowances

Several methods of deducting for depreciation of your drilling equipment are allowed under the federal income tax laws. This article may help you to decide which is best for your business.

IN computing your federal income tax, the Federal Internal Revenue Code of 1954 allows you to deduct for depreciation of certain property, including water well drills used in the trade or business. Under current regulations, the most-commonly-used permissible methods are the straight line method, the declining balance method (with a rate twice that of the applicable straight line rate), and the sum of the years-digits method. The following is a general discussion of these methods, with no attempt being made to go into all the ramifications or details that might be involved in any particular case.

The income tax regulations place limits on the use of some of these methods. The straight-line method, for example, may be used for any depreciable property whether new or used and whenever acquired. The declining balance method (with a rate twice that of the applicable straight line rate) and the sum of the years-digits method, however, may be used only for property you acquired new after December 31, 1953, where you were the user of that property and provided that the property has a useful life of three years or more. Depreciable property may be accounted for by treating each individual item as an account or by combining two or more assets in a single account. For the pur-

Straight Line Method

Year	Basis	Rate	Depreciation Allowance	Cumulative Depreciation Allowance
1958	$10,000	16⅔%	$1,666.66	$ 1,666
1959	10,000	16⅔%	1,666.66	3,332
1960	10,000	16⅔%	1,666.66	4,998
1961	10,000	16⅔%	1,666.66	6,664
1962	10,000	16⅔%	1,666.66	8,330
1963	10,000	16⅔%	1,666.66	10,000

Declining Balance Method

Year	Basis	Rate	Depreciation Allowance	Cumulative Depreciation Allowance
1958	$10,000	33⅓%	$3,333	$3,333
1959	6,667	33⅓%	2,222	5,555
1960	4,445	33⅓%	1,481	7,036
1961	2,964	33⅓%	988	8,024
1962	1,976	33⅓%	658	8,682
1963	1,318	33⅓%	439	9,121

poses of this discussion, all items will be treated as single item accounts. Where allowable, you may select the depreciation method merely by going ahead and using it. Any such selection is not binding as to other similar property acquired during the same or other years if each item is set up in a separate account.

All of these methods involve the recovery of the "basis" of the property over the estimated useful life of the asset. The "basis" is generally the cost or adjusted "basis" of the property less a reasonable salvage value. Your estimate of the useful life of any asset should be based upon the following factors, among others: wear and tear, normal progress of the art, (e.g., inventions, and new developments in the industry), climatic and local conditions, and your maintenance policies. Bulletin F, a table of estimated useful lives published by the Internal Revenue Service, provides in part that "taxpayers may determine reasonable periods of useful life for their depreciable property on the basis of the particular operating conditions, experience, and informed judgment as to technical improvements and economic changes." This bulletin gives six years as the estimated useful life of a cable-tool drill and eight years for a rotary drill.

The application of these three methods is as follows:

Straight Line Method

Under this method, the cost or other basis of the property less salvage value is deducted in equal annual installments over the estimated useful life.

Declining Balance Method

In this method, a uniform rate of depreciation is applied each year to

(Continued on page 48)

Sum of The Years-Digits Method

Year	Basis	Rate	Depreciation Allowance	Cumulative Depreciation Allowance
1958	$10,000	28.6%	$2,860	$ 2,860
1959	10,000	23.8%	2,380	5,240
1960	10,000	19.0%	1,900	7,140
1961	10,000	14.3%	1,430	8,570
1962	10,000	9.5%	950	9,520
1963	10,000	4.8%	480	10,000

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the line that guarantees

FULL FAUCET FORCE

HAS what the well driller WANTS to sell water systems at a profit

SUBMERSIBLE—½ to 3 H.P. Capacities to 3,000 GPH.

"HN" EJECTO — Deep or shallow-well. ½, ½, ¾, 1½ and 2 H.P. Capacities to 2,450 GPH.

"HK" EJECTO — Both deep-well and shallow-well models available. ½ and ½ H.P. Capacities to 720 GPH.

1000 MODELS—Not just a full line . . . but a complete selection of all the types and sizes of pumps that 80 years' experience in the business proves well drillers need.

COMPETITIVE PRICE—Model for model, size for size, you can't sell more pump for the money than a Myers.

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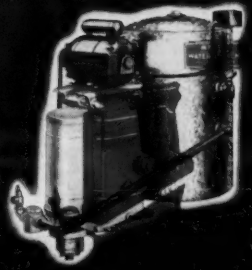
TOP QUALITY—No corner-cutting in materials or workmanship that cost you profit-shaving service call-backs. Myers quality helps you sell against the fast-buck, low-price pump dealers, and protects your profit *after* you make the sale.

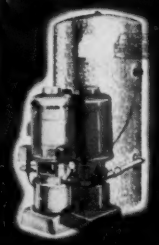
HONEST GUARANTEE—The Myers warranty is unsurpassed in the industry . . . backed by a reputation for good business and fine dealer relationship that goes back to 1870.

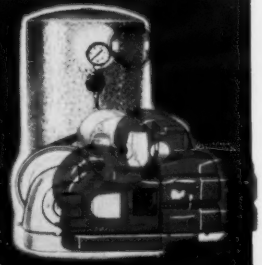
"K" EJECTO JR.—A space-saving, money-saving jet. ½ H.P. only. 11- or 21-gallon tanks.

"MHN" EJECTO—Twin impellers deliver greater capacity and higher pressure at deeper lifts. ½, ¾ and 1 H.P.

"HN" COTTAGE—Shallow or deep-well where water supply requirements and space are limited. ½ H.P. only.



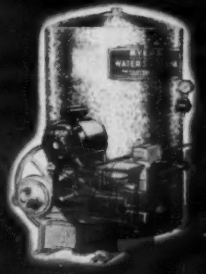


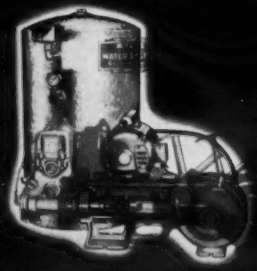


DEEP-WELL WORKING HEAD—Dependable performance on deep wells. ½ to 3 H.P. Completely self-oiling.

DEEP-LIFT EJECTO—For wells from 100 to 300 feet. 1½, 2, 3 H.P. sizes. Twin or packer type. Capacities to 1,150 GPH.

NEWEST SHALLOW-WELL RECIPROCATING—Quiet, compact, low priced, ½ H.P. 11, 21, and 42-gallon tanks. Ideal for low-capacity residential uses.





SHALLOW-WELL RECIPROCATING—Trouble-free service. Self-starting, self-stopping, self-oiling. Capacities to 400 GPH.

BULLDOZER—For the most water and most pressure from a shallow well. Five sizes from ½ to 5 H.P. 500 to 1,000 GPH.

HAND PUMPS—Full line, Myers is the standard of the industry.

HANDY DISTRIBUTION—No matter where you are when you need an extra pump, an extra part, or service assistance, there's a Myers distributor within easy reach.

EXPERT TRAINING—You and your men will be taught FREE all the pump know-how you'll need . . . taught by men who are experts in the sales and service of Myers complete water system line.

NATIONAL ADVERTISING—When you recommend a Myers to your drilling customers, they recognize the name. They know it for quality, because they have seen it consistently in national home and family magazines for three generations.

Call your Myers distributor today. Doing business with him is good business.

Myers® *Water systems*

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FREE! Send today for a free Myers ballpoint pen. Finished in simulated gold, this long writing beauty will be useful in a hundred ways every day. No obligation.

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News of the month

Submersible Pump Manual Published by Tait

A comprehensive 32-page manual on the selection, installation and maintenance of submersible pumps has been published by the Rapidayton Div., The Tait Mfg. Co., Dayton 1, Ohio.

Both 2 and 3-wire submersible systems are covered. Twenty-nine photos and sketches add greatly to the value of the manual. A detailed check chart of "trouble shooting" information is included.

New Appointment for Decatur Pump Co.

Decatur Pump Co., Decatur, Ill., announces the appointment of Ed M. Cahill as general sales manager for Burks Pumps, effective January 1, 1958.

Mr. Cahill has resigned as general sales manager from A. W. Cash Valve Mfg. Corp., Decatur, Ill., a position he held for many years. Due to the parallel distribution of both products throughout the country, he will continue to have contact with his many friends in the field.

Crescent Plastics Forms Technical Services Division

Crescent Plastics, Inc., of Evansville, Ind., has named Ted M. Yeiser as manager of Plastic Pipe Technical Services, a newly formed division.

The rapid development of new and improved plastic pipe materials and the growth of plastic pipe sales potentials in industrial, municipal, golf course and other applications was stated by a company spokesman as the reason for this expanded service.

Mr. Yeiser, a graduate engineer, joined Crescent Plastics in 1950, serving as project engineer, production manager, and manager of oil field pipe sales.

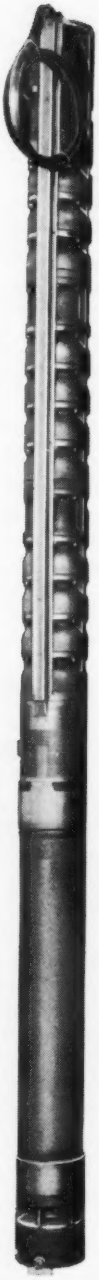
Bucyrus-Erie Drill Tool Supervisor Retires

Announcement has been made by Bucyrus-Erie Co., South Milwaukee (Wis.) manufacturer of drilling and excavating equipment, of the retirement of Donald E. (Barney) Campbell after a 42-year association with the firm.

Campbell, who had been drill tool supervisor for Bucyrus-Erie since 1944, began his career in 1915 as an erector for the Armstrong Mfg. Co., Waterloo, Iowa. He later was erecting shop foreman. When Bucyrus-Erie purchased manufacturing rights for the Armstrong line of drills in 1933, Campbell remained with the Waterloo firm as a salesman. He joined the Bucyrus-Erie drill division in 1944.

A member of the Iowa Well Drillers Assn. for more than 40 years, he received an honorary lifetime membership in that organization in 1957.

During his life-long association



whatever
your
size
requirements
there's
a

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to meet them—all the way
⅓ hp to 50 hp

Whether you're looking for a ⅓ hp —or a 50 hp—submersible pump, a Sumo will meet the job requirements exactly. Foolproof, floodproof, frostproof Sumo Pumps fit wells down to 4" in diameter. Your customers like the trouble-free operation... *you'll* like the trouble-free installation and servicing!

Sumo Pumps in any size are immediately available for immediate delivery anywhere.

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P. O. Box 983, Stamford, Conn.
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with the drilling industry, Campbell saw many changes occur in water well drilling. Among the most important were the change from wooden rigs with cast steel gears and pinions to all-steel machines with machined gears and other parts, and the change from drill tools with straight joints to the present tools with API standard tapered joints.

Campbell and his wife, Gladys, who have one daughter and three grandsons, plan to move to Florida soon. The Campbells currently are residing at 823 Hawthorne Ave. in South Milwaukee.

Oregon Drilling Assn. Meeting Held Nov. 15-16

The annual meeting of the Oregon Drilling Assn. was held at the Multnomah Hotel in Portland, Ore., Nov. 15-16. Among the activities taking place were talks on topics of interest to drillers in addition to a full schedule of social activities.

New officers elected by the association are: E. E. Storey, Klamath Falls, president; Mark Christensen, Eugene, vice-president; and Ken Hartley, Klamath Falls, secretary-treasurer. Directors elected to 3-yr. terms are Roy Perkins, Jack Duus and Chas. Hartley. Elected to a 2-yr. term is Harry Robinson.

Colorado Driller Meeting Held in Denver Nov. 21-23

The 24th annual convention of the Colorado Water Well Contractors Assn. was held Nov. 21-23 at the Shirley-Savoy Hotel in Denver, Colo.

In addition to talks on *Rock Aquifers Identification, Gamma Ray &*

Now off the press . . .

the book you've been waiting for!

WATER WELL DRILLING WITH CABLE TOOLS

by R. W. Gordon

Here's the book that water well drillers everywhere have wanted for many years. Written by a former drilling contractor who has served as a drilling consultant in the United States and Latin America, *Water Well Drilling with Cable Tools* gives you:

. . . for the first time in one volume a complete manual on well drilling with cable tools. It covers all aspects of the subject including geology, drilling methods and techniques, and a historical review . . . provides full data on drilling machines and tools . . . tells you how to solve numerous drilling problems. It's a beautiful 230-page book containing 194 illustrations and 44 tables . . . packed with useful information for you!

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Gentlemen:

I enclose ☐ personal check ☐ money order in the amount of $..... for ..... copies of WATER WELL DRILLING WITH CABLE TOOLS at $2.50 per copy.

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Neutron Logging and *Water Entrance Logs,* a get-acquainted party, banquet and several luncheons were held.

Officers elected to head the association for the coming year are: president, V. J. Stewart, Colorado Springs; vice-president, E. R. Stone, Denver; and secretary-treasurer, Floyd Oliver, Jr., Greeley. Elected to the board of directors were Wayne Cummins, Lafe Holden, Vern Swanson, George Waneka and holdover director Archie Hier.

The 1958 convention is also scheduled to be held in Denver, but a definite date has not been set.

Cable Tool Drilling Book Published by Bucyrus-Erie

A new book describing and explaining the use of percussion drills and cable tools for water well drilling has been published by Bucyrus-Erie Co., South Milwaukee, Wis.

Water Well Drilling With Cable Tools, by Raymond W. Gordon, is a 230-page, liberally-illustrated book. It was written to help all cable tool drillers, especially the beginner.

Bucyrus-Erie published the book in response to a heavy demand from drillers in the field and others in the well drilling industry.

Water Well Drilling With Cable Tools includes 21 chapters, 44 tables, 194 illustrations, a generous glossary and appendices containing conversion tables and drilling problems.

A generally accepted method of handling percussion drills and cable tools is presented. Almost all aspects of water well drilling are covered, briefly, at least.

The cable tool machine and its attachments, including both drilling and fishing tools, are described. The cable tool rig is compared with other types of drills. The author explains how the rig is set up in the field and the type of care it should receive during drilling.

Geology is discussed briefly. Methods for overcoming drilling problems imposed by various formations are explained.

Types of bits are described, and an outline of the procedure for dressing bits is given. Basic screen installation development and recovery are discussed.

The author is drill sales representative for Bucyrus-Erie Co., Atlanta (Ga.) sales district. Gordon joined Bucyrus-Erie in 1948 after having been associated with his father in the drilling business. As a member of Bucyrus-Erie's export sales department, Gordon taught the well-drilling business to people in Central and South America. He joined Bucyrus-Erie's domestic drill sales department in 1955.

Copies of *Water Well Drilling With Cable Tools* may be obtained from Bucyrus-Erie Co., Publicity Department, South Milwaukee, Wis. The price is $2.50.

A History of Water Well Drilling, which begins on page 14 of this issue, is based on a chapter from Gordon's book.

Wilson Pipe & Supply, Milwaukee, Named Bucyrus-Erie Distributor

Wilson Pipe & Supply Co., Milwaukee, Wis., has been appointed a distributor for the complete line of water well drills manufactured by Bucyrus-Erie Co., South Milwaukee, Wis.

Wilson Pipe & Supply's territory

(Continued on page 32)

for maximum **PROFIT**

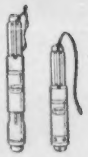
Rapidayton has THE **BIG** ONES

The big, profitable jobs come your way when you stock the "big ones" in the fast-selling Rapidayton line of pumps and water systems. Rapidayton Dolphin* submersibles, with the exclusive "Double Life" stage design, are now available in both 2-wire and 3-wire models. Among jets, the two-stage Rapidayton Twin and the all-brass multi-stage Super Champ* have no equal. These systems, representative of the complete and modern Rapidayton line, are "big" in every sense of the word: big capacity, high pressure, greater efficiency and dependability. They are "big ones" from the profit angle, too. Each has solid "sellable" features, many exclusive with Rapidayton, making it easy to get the retail price you ask. In addition, you get a generous trade discount. For maximum profit, **sell up** to the Rapidayton "big ones."

Dolphin Submersibles,

Dolphin Submersibles, 0 to 500 ft.

Rapidayton has America's most complete line of submersibles for 4" (or larger) wells. 2-wire models, with advanced simplified design, for depths 0 to 360 ft. 3-wire models, with capacities up to 2,400 g.p.h. for depths to 500 ft.

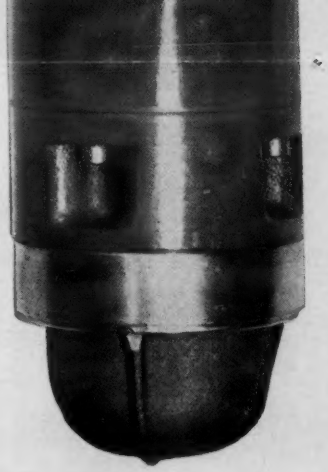


Twin Champion, 0 to 150 ft.

Two-stage convertible system, completely packaged. Pumps full capacity at 40 lbs. pressure. Quad-Volute self-priming design; exclusive Quick Connect flange (patented). Capacities range to 1250 g.p.h. Priced with most single-stage deluxe models.

Vertical and Super Champs, 0 to 200 ft.

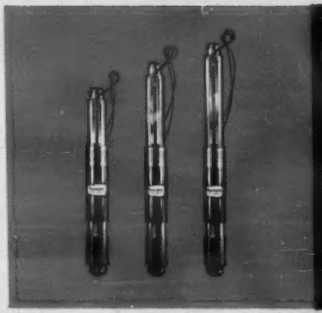
Easy to prime and install single and two-stage Vertical Champions, capacities to 1220 g.p.h. ALL BRASS-constructed Super Champs, ½ to 2 h.p. Capacities to 1350 g.p.h.



Write for details or call your wholesaler

The 2-wire submersibles, 0 to 360 ft.

Now—a submersible which meets the needs of all your domestic installations—both shallow and deep wells—0 to 360 ft. Advanced SIMPLIFIED design eliminates installation and service problems. (There's no control box!) Motors (¼ through 1 h.p.) have high-torque start and operate like jet motors. THREE SERIES: deep-setting models, mid-range, and high capacity. Priced in jet pump range.



Rapidayton division

The Tait Manufacturing Company, Dayton 1, Ohio

Established 1908 as The Dayton Pump and Manufacturing Co.

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*TRADEMARKS (PAT. PENDING ON DOLPHIN)

News . . .

(Continued from page 29)

includes the Wisconsin counties south of and including Trempealeau, Jackson, Clark, Taylor, Price and Ashland, in addition to the Upper Peninsula of Michigan. Much of this formerly was open territory.

The new distributor occupies a building at 13400 W. Carmen Ave., Milwaukee. The models 1-W, 20-W, 22-W and 60-L drills will be handled, and also parts, in addition to a stock of drilling and fishing tools. Service facilities will be maintained.

Officers of Wilson Pipe & Supply Co. are: E. S. Wilson, president; S. D. Wilson, vice president and treasurer; and G. S. Chesterman, secretary. S. D. Wilson will be manager. He formerly was manager of Wilson & Beemer Supply Co., Inc., Ames, Iowa.

New Myers Submersible Pumps Offer 13,000 GPH

A new line of 6-in. diameter submersible pumps is now being manufactured by The F. E. Myers & Bro. Co., 249 Orange St., Ashland, Ohio.

The new line of heavy-duty submersible units is especially suitable for deep well installations where large volumes of water are needed, according to the company. The pump can be installed in wells as deep as 700 feet. The line's top capacity at a 50-ft. depth is over 13,000 gallons of water per hour.

Called the *SC* submersible pump, units are available for providing primary water supply for industrial plants, cities, large farms and groups of suburban homes, as a pressure system for schools, dairies, hospitals, etc., as a booster system for increasing pressure in city water lines and as an irrigation pump.

The Myers *SC* submersible operates completely under water and is a combined pump and motor unit. The 60-cycle motor is oil-lubricated, sealed, and drives the pump through a rigid coupling. Power is supplied to the submerged motor by a waterproof cable that is attached to the riser column pipe. The pump is available in 5, 7½, 10 and 15-hp sizes.

The pump unit is a multi-stage centrifugal turbine pump and is made in either flat pancake stages for lower capacities at high head or turbine bowl type construction for higher capacities at lower heads. The impellers on the submersibles are bronze and of the enclosed type.

Among the features which have been incorporated into the new submersibles are a shoe-type thrust bearing for long life and high thrust and double bearings in the strainer casting for better shaft support.

Bucyrus-Erie Drill Engineer, Herbert W. Thornburg, Retires

Herbert Watson Thornburg, formely chief engineer — drills, Bucyrus-Erie Co., South Milwaukee, Wis., retired in December after 35 years with the with the company. Thornberg, 67, had been consulting engineer — drills since 1954.

Thornburg also has retired as a consulting editor of *The Driller.*

Thornburg joined Bucyrus-Erie in 1922 as a draftsman. Later, he became

(Continued on page 39)

Bucyrus-Erie Tools Help You Get the Most from Your Rig

Thousands of drillers everywhere have come to rely on Bucyrus-Erie tools for top performance.

From swivel socket to bit, Bucyrus-Erie's careful steel selection and modern metallurgical processes assure extra strength for long life. All design details originate in the field, based on years of practical research. Every tool is skillfully built to give you top footage in less drilling time. These tools have been tested and proved in all types of formations and in all parts of the world.

And you don't pay extra for the high quality of these tools. Volume sales and excellent manufacturing facilities make it possible to offer Bucyrus-Erie tools at the same price as ordinary tools.

The next time you need drill tools, try Bucyrus-Eries. Write today for illustrated catalog.

13A58C

BUCYRUS ERIE

BUCYRUS-ERIE COMPANY • SOUTH MILWAUKEE, WISCONSIN

from the MAILBAG

This page is open to any of our readers having questions to ask relating to drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers, who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space will permit. Address: The Driller, South Milwaukee, Wis.

Granite Usually Not Heavy Water Producer

Sirs:

I am drilling in a mountainous area, and my particular problem is as follows: I am drilling a well for a client who wants a production of at least 50 gpm. After going through 60 feet of boulders and quicksand, I hit blue granite rock and went down in that to 200 feet, where I got water, but only 25 gpm. So I continued to drill farther until I am now down to 480 feet without getting any more water. I am at a loss as to whether I should continue drilling or quit. What do you advise?

F.L. Quebec

Dear Sir:

Though you did not indicate the size of the hole you are drilling, we note that you went through 60 feet of earth, quicksand and boulders, then hit granite rock into which you drilled 200 feet.

Presumably, with the exception of the 60 feet of earth, quicksand and boulders, the balance of the drilling was in blue granite. In general, granite is not a heavy water producer. The granite wells which show the largest capacity are generally those which penetrate a bed of gravel or till. The reason for this is that the water from the overlying formation will drain down through the joints and cracks and thus keep the supply in the rock constant.

Accordingly, as these joints and cracks are usually most numerous in the upper part of the formation, it is not considered good practice to drill deeper than 300 feet in the granite. Thus, if water is not struck in great quantity when a depth of 300 feet is reached, it is usually not advisable to go any deeper. It is, however, sometimes advisable to start a new well several feet from the old one in the effort to strike new joints which may bear more water. Sometimes a certain well might miss a water producing joint while another, a short distance off, will be a good producer.

We do not believe, therefore, that it would be advisable for you to go any deeper with this well, as the chances of your getting greater water production are very doubtful.

Has Trouble With Sand in Well Water

Dear Sir:

I would appreciate your help in dealing with a sand problem that has recently given me trouble. I encountered this sand after drilling 30 feet. After casing to that depth with 6-in. pipe, I drove the pipe to a depth of 70 feet. Then I drilled ten feet further in clay and rock, leaving this portion open. Next I perforated the pipe at a distance of 55 to 57 feet, but the sand closed up the perforations, shutting off the water. So I pulled the 6-in. pipe and reamed the hole to 10 inches, setting 8 ¼-in. pipe through sand and water when the reaming was finished. Then I put the 6-in. casing (with about ten feet of perforations, made as narrow as possible with an acetylene torch) inside the 8 ¼-in. casing. The space between the two casings was then filled in with ½-in. gravel, after which I pulled out the 8 ¼-in. pipe. The hole was then filled up on the outside of the 6-in. pipe with the ½-in.

(Continued on page 38)

With the new Morrison WELL-TANK WATER SYSTEM you need no pit — no welded adapters — no pump house — and NO ABOVE-GROUND TANKS!

The greatest advance in water system design since the submersible pump, the new Morrison WELL-TANK WATER SYSTEM meets all sanitary well code requirements . . . 100% safe for Grade "A" farms, restaurants, public buildings and homes.

There's no sweating tank in the house — no lost space, no pump noise. Easy to install, no welding. Pressure at the well makes it ideal for furnishing water to any number of buildings.

Higher unit sale for well driller and pump installer, with money savings up to many hundreds of dollars for your customers.

The new Morrison Well-Tank Water System fits well casings from 4″ to 7″ without adjustment. Tank capacities are 60, 120, and 265 gallons, and the unit can be used with any submersible pump up to 2 H.P.

Check . . . Mail this coupon for the whole story . . .

THE *Morrison* COMPANY

125 West Melvina Street, Dept. D, Milwaukee 12, Wisconsin

Tell us more . . . about the new MORRISON "Aqua-Flo" WELL-TANK WATER SYSTEM.

Name .....

Address .....

City ..... State .....

Attn.: of .....

NEW CLAYTON MARK

3-WAY JET

THE PUMP THAT OFFERS EVERYTHING . . .

• 3-WAY CONVERTIBILITY • DEPENDABILITY • ECONOMY

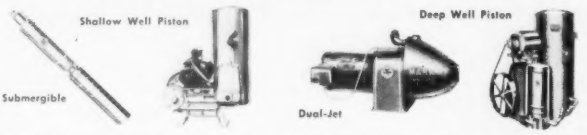
Now the convertible Clayton Mark 3-Way Jet Pump, with its high efficiency to depths of 80 feet, is better than ever. With one charge of water, the unique priming tube and improved design let it *prime rapidly!* From then on it reprimes itself. Yet—the Mark 3-Way Jet is priced to *give you real sales volume.*

Water has been Clayton Mark's business since 1888. Now with two modern plants and jobbers conveniently located to serve you, you can get everything you need for a complete well and water system from Clayton Mark—the most respected name in water. Then you sell a complete job—and at a substantial margin of profit.

Eliminate costly call-backs. Increase your profits. Standardize on Clayton Mark Pumps and Well Supplies. Be sure you get the only water well equipment with 70 years of manufacturing and field experience behind it. Ask your hardware, plumbing, or well supply jobber for Clayton Mark—America's fastest growing water well line.

A pleased customer admires her rugged new shallow well Clayton Mark 3-Way Jet Pump which primes to depths of 25 feet. She knows this low-priced beauty will run quietly and efficiently for years.

MARK 3-Way Jet — ½ and ½ HP sizes for deep and shallow wells. Depths to 80 feet. Capacities to 760 GPH.



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Mail coupon today for new 3-Way Jet catalog—or see your local jobber.

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Please send catalog on:

- ☐ New 3-Way Jet Pump
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Name_____

Address_____

Town_____ State_____

Mailbag . . .

(Continued from page 34)

gravel. By running water inside the 6-in. pipe, sand was washed back from the pipe, allowing some six tons of gravel to be packed into the surrounding hole.

When we started pumping the well, the sand began coming up with the water and damaging the pump. After considerable pumping, we have cut one cylinder and numerous sets of leathers.

Can you give us any information on how to solve this problem?

L.F.B. Oklahoma

Dear Sir:

When wells are made in sand and gravel, it is usually necessary and desirable to place a screen at the bottom of the well to prevent the fine sand from rising in the pipe, damaging the pump leathers and, in time, plugging the wells. We understand this is what happened in your case.

If the formation is coarse sand or gravel, and the particles making up the bed are of sufficient weight to prevent them from lifting in the pipe, good results are usually obtained by perforating the bottom of the drive pipe. The size of the perforations depends on the amount of water to be used and the thickness of the gravel stratum.

You state that you have perforated the pipe and packed gravel around the perforated area, but the sand persists in rising in the pipe. This indicates that the perforations are too large or the gravel is too coarse, permitting the sand to lift through the gravel and get into the pipe through the perforations. Usually, when wells are made in sand which is so light that it lifts easily in the pipe, and so fine that the rate of travel of the water is slow, the safest plan is to use a well screen. The purpose of a screen is to provide a number of openings which are small enough to prevent the sand particles from passing through and numerous enough to permit the required amount of water to be drawn through without causing the rate of travel of the water through the sand to be so great that the sand will pack against the openings. Thus, the size of the screen depends upon the fineness of the sand.

We suggest you consult a manufacturer of well screens, telling him of your problem and conditions. He will be in a position to recommend the proper size and type of screen for your purpose.

Wants Information on Fishing Problem

Gentlemen:

Could you give me your best information regarding a fishing tool to recover a drill bit that is broken at the pin joint and leans against the well wall. A friction socket or horn socket will not go over it. It is 280 feet down in a 6-in. hole. Dimensions of the bit are 2¼" x 3¼" x 7'.

I have heard of a "cherry picker" tool. How is one made or where can I get one? I would appreciate any information on retreiving the tool, as I do not expect to leave it in the ground.

A.H. Missouri

Dear Sir:

For a job of this character, usually difficult, a bit or wall hook will usually straighten the bit upright so that a fishing tool may be used to effect engagement. In operation, the bit hook is usually used on the bottom of a set of jars and is driven down around the shank of the bit so that the bit hook catches around the collar, forcing the bit out from the wall of the hole.

It sometimes happens that, after the hook has been removed, the bit will not stand upright, but will fall back against the wall of the hole in such manner that a fishing socket cannot be used. This trouble can be overcome

by running some fine slag coal into the hole before running the bit hook. This will serve to hold the bit erect after it has become straightened.

If the lost bit has been in the hole for a considerable length of time, thus giving the cuttings a chance to solidify, it may be necessary to spud around the bit before running the fishing socket. The tool for this purpose is a spud. A spud will serve the same purpose as a bit hook in straightening a bit which leans in the hole and it will also loosen the cuttings around the tool so that a fishing socket will work.

In your letter you mention the possibility of recovering the bit with what is commonly called a "cherry picker." This is a three-quarter round spud which is usually used as a friction socket for the removal of loose objects from the hole. We do not believe, however, that this could be driven down over the bit as long as it remains against the wall of the hole. A bit hook or side spud would, in our opinion, be better in this case.

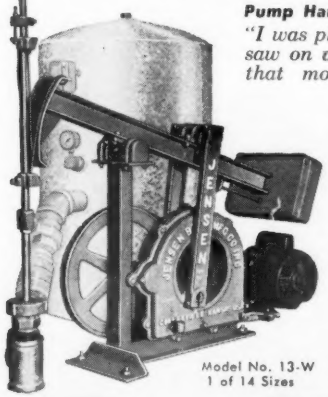
News . . .

(Continued from page 32)

assistant executive of small excavator engineering. When Bucyrus-Erie purchased the drill manufacturing business of the Armstrong Mfg. Co., Waterloo, Iowa, in 1933, Thornburg became engineer in charge of drills. He later became chief engineer — drills.

A native of Panora, Iowa, Thornburg was graduated from Iowa State College in 1917 with a mechanical engineering degree. Before coming to Bucyrus-Erie, he served with the U. S. Geological Survey, the U. S. Corps of Engineers and the Hart-Parr

JENSENS have a lot to love



Model No. 13-W
1 of 14 Sizes

Pump Handle Pete says:
"I was plumb touched the other day by a sign I saw on a farm gate that read: "The only love that money can buy — Puppies For Sale."

It's kinda the same way with folks that buy a JENSEN JACK and Automatic Water System. It just sits there nodding agreement, loyal and dependable as can be, and helps out all around the place with plenty of water, day and night.

Your customers will agree there's a lot to love about JENSEN AUTOMATIC WATER SYSTEMS. And they return the affection too, especially to the Dealer that sells and recommends 'em.

JENSEN WATER SYSTEMS
Made by JENSEN BROS. MFG. CO., INC., Coffeyville, Kansas

Machine Shops, Charles City, Iowa. As an enlisted man during World War I, he served with a gas regiment attached to the Chemical Warfare Service.

More State Drilling Associations Announce 1958 Convention Dates

Announcement has been made that the following state water well drilling conventions will be held at the times and places listed:

Nebraska—Feb. 20-21.
Lincoln—Hotel Lincoln
North and South Dakota—
March 2-3-4
Jamestown, N.D.—Gladstone Hotel
Minnesota—March 11-12-13
Minneapolis—Hotel Leamington
Montana—April 1-2-3
Billings—Northern Hotel
Pennsylvania—April 18-19
University Park—Nittany-Lion Hotel
Missouri—April 28-29
Jefferson City—Governor Hotel
Michigan—May 14-15-16
Lansing—Olds Hotel
Mid-South—June 25-26-27
Memphis, Tenn.—Claridge Hotel

Oklahoma Representative Named by Deming Co.

The Deming Co., Salem, Ohio, manufacturer of pumps and water systems, has recently announced the appointment of William E. McNeal as factory representative for the state of Oklahoma.

McNeal comes to Deming with considerable experience in the pump field. One of his first duties at Deming was to attend the well-known Deming Water Systems School.

McNeal attended both The University of Arkansas and Arkansas Tech, where he majored in agricultural engineering. He will contact Deming dealers and distributors from his headquarters at 144 Rebecca St., Fayetteville, Ark.

West Coast Manager Named by Carlon

Appointment of Richard G. Kress as general manager of the west coast division has been announced by Carlon Products Corp., 10225 Meech Ave., Cleveland 5, Ohio.

A newly-acquired Los Angeles area plant and the plant at Klamath Falls, Ore., will service the western states.

The management of these plants and the western territory will be under the direction of Kress, who for the last 14 years has been associated with the plastic extrusion industry in an executive capacity. He was former-

(Continued on page 43)

WILLIAMS "Lift-Out-Seal"

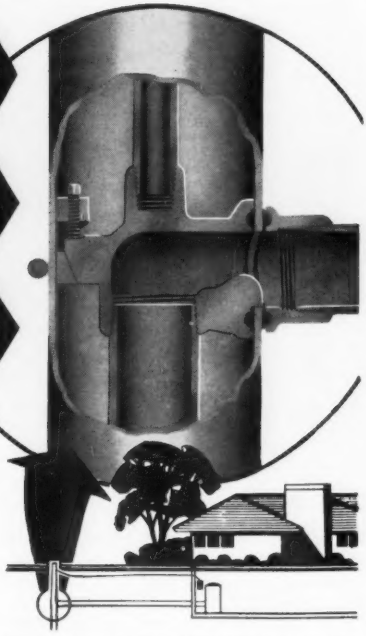
PUMP ADAPTERS

PITLESS

New Low Price
means Easy Sales, Greater Volume

For 4" to 8" Wells
Complete Range of Sizes

Extra Strength
lets you install the Largest pump with complete confidence



• By specifying a Williams "Lift-Out-Seal" you make extra profits on each job. See for yourself how this low cost, high quality will sell itself.

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Send me a FREE data sheet and price list.
I am a.
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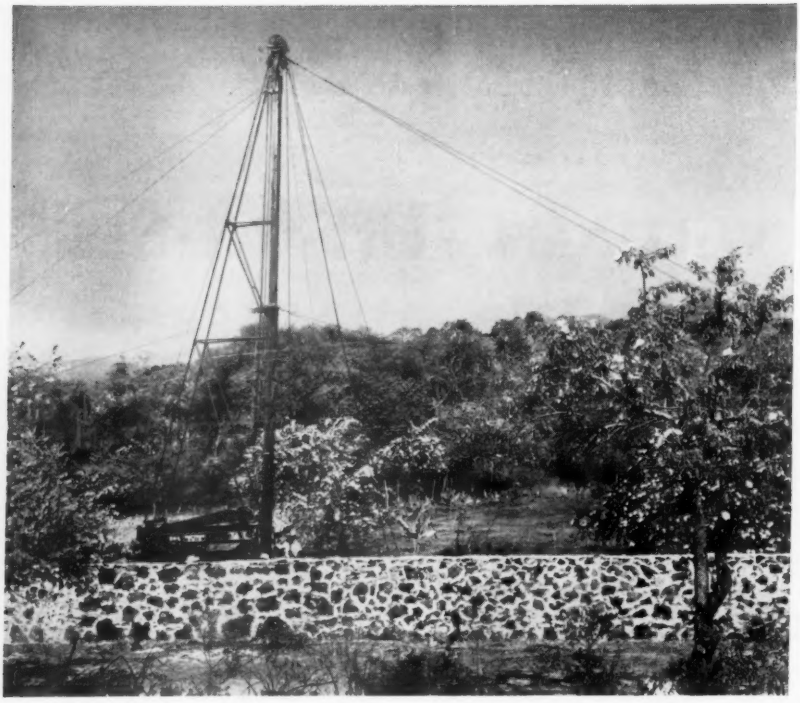


The Results Are Sweet

On the outskirts of Cuernavaca, Mexico, 46 miles from Mexico City, photographer Mary Saint Albans came upon this Bucyrus-Erie 24-L drilling a suburban irrigation well in a blossoming garden. The drill was down 100 feet in a volcanic rock formation. Diameter of the hole was 11 inches. The drill, which is owned by the world's largest cooperative sugar mill, located in Zacatepec, is used to put down irrigation wells for its extensive crop lands. When it has completed this well, the rig will go back to drilling for cane-growing irrigation. The land fed by this irrigation water produced 700,000 tons of sugar cane last season. With more land under cultivation next year, the mill expects to up production to 1,000,000 tons.

News . . .

(Continued from page 40)

ly west coast sales manager for Carlon.

Kress has appointed Jack Price as sales manager in charge of California, Nevada and Arizona, and Charles Porter to head sales in the Pacific Northwest area.

Groundwater Consultant Opens Office in Boise, Idaho

Keith E. Anderson, formerly regional drainage and groundwater engineer for the Bureau of Reclamation in the Pacific Northwest, has opened offices in Boise, Idaho, as a consultant in engineering and geology, with specialization in groundwater, drainage, and irrigation problems.

Prior to joining the Bureau in 1950, he had been employed in Iowa and Missouri on groundwater investigations.

Water Booklet Published By Franklin Electric Co.

A new, 28-page booklet published by Franklin Electric Co., Inc., and entitled *Beyond the Water Mains,* outlines the history of man's search for water and his development of mechanical means of delivering it for domestic use.

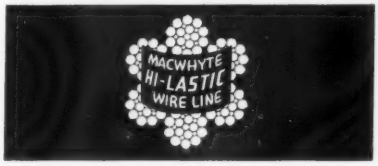
The booklet sketches the story of water from Genesis through current times. After a year in preparation, it is now released for free, single copy distribution to educational leaders, agricultural and vocational schools, engineering colleges, architects, engineers, well drillers and distributors of water systems.

Single copies will be mailed, no

(Continued on page 46)

LOWER YOUR YEARLY DRILLING LINE COSTS

. . . by standardizing on "Hi-Lastic"* Drilling Line.



6X21F LEFT LAY "HI-LASTIC" STEEL SPUDDER LINES

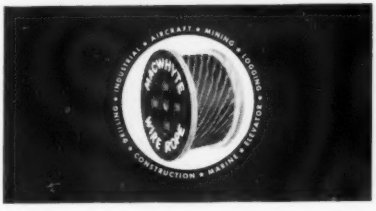
This is the line with the "better feel". It is especially made to meet severest drilling requirements. It provides greater elasticity for shallow drilling and enables drilling tools to drop further for a given stroke of the machine. Stick to "Hi-Lastic" and you save money.

There's a Macwhyte wire line for every drilling need. All lines supplied promptly through Macwhyte distributors.

SPECIAL OFFER! The Macwhyte Wire Rope Manual (G-16) contains over 70 pages of useful information on the care of wire rope. Your copy free on request from your Macwhyte distributor or write direct to:

MACWHYTE
Company
2906 Fourteenth Ave.
Kenosha, Wisconsin

*A Special "Hi-Lastic" Drilling Line with extra reach for shallow water well and blast hole drilling under 1000 feet. Available with plastic core on special order.



Drill News for you . . .
from RICHMOND, Indiana

BITS *from the wit sharpener*

The Sunday-school class was composed of three-year-olds. The teacher asked: "Do any of you remember who St. Matthew was?" No answer.

"Well, who was St. Mark?" Still no answer.

"Surely someone must remember who Peter was?"

The little faces were full of interest, but the room was quiet. Finally, a tiny voice came from the back of the room.

"I fink he was a wabbit."

Policeman: "Lady, your dog has just been run over by a steam roller."

Lady: "Okay, just slide him under the door."

The teacher had written 79.5 on the blackboard, and to show the effect of multiplying by ten, erased the decimal point.

"Now, Alfred," she asked, "where is the decimal point?"

"On the eraser," replied Alfred with a triumphant smile.

An Italian immigrant was standing on the docks at one of our great seaports, watching a ship unload its cargo.

Another bystander, also observing the activity, asked him, "Is that a U-boat?"

"It'sa no mine," came the unexpected reply. "I'ma just watcha the boat unload."

Hungry customer at lunch counter: "One roast beef sandwich."

Waiter: "Will you eat it here or take it with you?"

Customer: "I hope to do both."

"What do you mean by saying he's the laziest man on earth?" asked one man.

"Well," replied the other, "he has his prayers typewritten and posted on the wall. When he goes to bed he points to them and says, 'Them's my sentiments, Lord. Read 'em'."

Job applicant: "I'm Gladys Zell."

Personnel Manager: "I'm pretty happy myself. Have a seat."

A minister and his wife were talking about two of his congregation members.

"Yes," said the minister, "I knew both of them as boys. One was a clever, handsome fellow; the other a steady, hard worker. The clever lad was left behind in the race, but the hard worker, well, he died and left $200,000 to his widow. It's a great moral."

"Yes," smiled his wife, "it certainly is. I heard today that the clever one is going to marry the widow."

The clock struck twelve. Father came to the head of the stairs and boomed: "Young man, is your self-starter broken?"

Voice from below: "It dosen't matter as long as there's a crank in the house."

Driller: "My pal and I went to hear a speech last night. The guy said that drillers and roughnecks were disorderly and undisciplined."

Wife: "Well, did you protest?"

Driller: "Did we protest?! We wrecked the joint!"

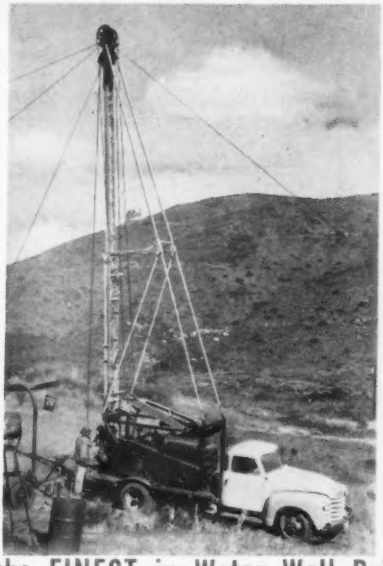
Drill News for you . . .
. . . from RICHMOND, Indiana

You'll soon enjoy new quality in drill manufacturing — skilled workmanship *as always*, but NOW in one plant devoted exclusively to the manufacture of drilling equipment. Bucyrus-Erie drills will soon roll out of this new modern $12-million plant, which is nearing completion on a 148-acre site three miles west of Richmond, Ind. Machinery is currently being set in to start production on the complete line of Bucyrus-Erie drilling equipment by mid-1958.

In building a new plant, Bucyrus-Erie continues its tradition of investing in your drilling future to insure you the best service *all ways*.

Investigate the reasons why Bucyrus-Eries are the most preferred water well drills in the industry. Write today for Bulletin No. WWD-Line-1 and put your drilling future in the profit spotlight.

104W57C



FIRST with the FINEST in Water Well Drills

BUCYRUS ERIE

BUCYRUS-ERIE COMPANY • SOUTH MILWAUKEE, WISCONSIN

News . . .

(Continued from page 43)

charge, on request. Advise name, title and complete address. Send request on business stationery to Franklin Electric Co., 350 East Spring St., Bluffton, Ind.

Water Resources Reports Released for Public Inspection

The Geological Survey announces that the following reports on water resources in the various sections of the country are being released in open file. Copies of all these reports are available for consultation in the room indicated, General Services Bldg., Washington 25, D.C. Some of them also are available for consultation at other places as listed.

Construction and Use of Special Drawdown Scales for Use in Prediction of Water-Level Changes Throughout Heavily Pumped Areas— Room 1242-G, GSA Bldg.

The Spacing of Pumped Wells— Room 1242-G, GSA Bldg.

Geology and Ground-Water Resources of Red River Parish, La.— Geological Survey, 16 Geology Bldg., University of Louisiana, Baton Rouge, La.; State Department of Public Works, Baton Rouge, La.; Louisiana Geological Survey, Baton Rouge, La.; Room 1242-G, GSA Bldg.

Geology and Ground-Water Resources of DeSota Parish, La.— Geological Survey, 16 Geology Bldg., University of Louisiana, Baton Rouge, La.; State Department of Public Works, Baton Rouge, La.; Louisiana Geological Survey, Baton Rouge, La.; Room 1242-G, GSA Bldg.

Geology and Ground-Water Re-

VALLEY STEEL PRODUCTS COMPANY

Louisiana, Missouri

NEW AND USED WATER WELL CASING

LINE PIPE

ALL SIZES ALL WTS. — IRRIGATION PIPE — GALVANIZED BLACK

OIL WELL CASING AND TUBING

FREE QUICK DELIVERY — YOUR YARD OR JOB SITE
WATCH FOR OUR TRUCKS — THEY DELIVER IN YOUR STATE

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ECONOMICAL PRICES • QUICK DELIVERY • SATISFACTORY SERVICE
WATER WELL CASING AND PIPE OUR SPECIALTY

sources of Quinn River Valley, Humboldt County, Nev.—Geological Survey, Room 231, State Office Bldg., Carson City, Nev.; Room 1242-G, GSA Bldg.

Ground Water in the Pullman Area, Whitman County, Wash.—Geological Survey, 2128 South 38th St., Tacoma, Wash.; Div. of Water Resources, Olympia, Wash.; Room 1242-G, GSA Bldg.

Is More Standardization The Answer?

From *The Hickory Well Supplier*, October, 1957, come these thoughts on standardization of equipment and materials as an aid in giving the well customer the greatest value for his money:

"A problem that eternally haunts the average well drilling contractor is getting the public to pay a fair price for the well he wants drilled. There seems to be a tendency for all buyers to shop around for the lowest price available.

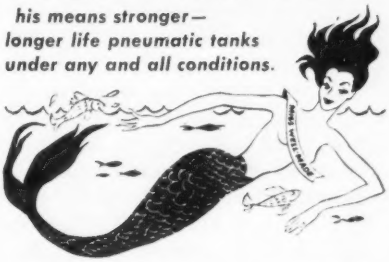
"The question has been raised, 'Is the buyer of a well getting all he has to pay for in quality, efficiency and lasting service from his investment in his wells? Does this lack of confidence make him feel that he can beat down our prices on well drilling?'

"What can the well driller do to improve his services and build buyer confidence? One answer, we feel, is standardization. By using the same make machines, the driller soon knows his machine well enough to drill better and faster with it. Keeping operators working in the same general areas enables them to learn what to do to make time and drill wells in that particular formation.

"When the driller buys all kinds

WELL-MADE TANKS are "hi-Spec" GALVANIZED INSIDE and OUT!

his means stronger—longer life pneumatic tanks under any and all conditions.



"hi-Spec" galvanizing insures more zinc (rust proof) coating per square foot than is called for in ASTM, Government or Mill Standards.

Compare these
WELL-MADE FEATURES

- **RIGID WELD SHELL SPUDS**—Won't work loose.
- **EXTRUDED HEAD SPUDS**—Protect against leakers.
- **HEAD & BOTTOM OFFSET**—Inserted under pressure, locked in, submerged arc welded.
- **PRESSURE GAUGE TAPPING**—for easy—speedy—inexpensive hook-up.
- **MID-POINT AIR VOLUME CONTROL TAPPING**—for more water—fewer pump starts.
- **1⅛" REINFORCED SAFETY BAND**—Protection against corrosion.
- **"HI-SPEC" GALVANIZED INSIDE & OUTSIDE**—Insures maximum zinc thickness.
- **MANUFACTURED IN UNIVERSAL SERIES**—Adaptable for all installations.
- **UNCONDITIONALLY GUARANTEED**

See your dealer or write
Metal Coating Corporation
1215 West 37th Street
Chicago 9, Illinois

and brands of pipe, he loses time shopping for it and also time in making the various makes of pipe work together when installing it. When he buys from many suppliers he spends valuable time shopping for his supplies and often loses quantity discounts. When the driller uses different brands of drilling and fishing tools each time he buys, he loses valuable time and efficiency in learning how to use them most effectively.

"Settling down to standard lines from a single dependable source, the driller can soon become efficient in his operations with these particular tools, machines and workers and thus offer the well buyer more for his money in the form of a better well, drilled faster and at less cost. Such a result would be bound to build confidence in the buyers of wells."

Pelzer...

(Continued from page 21)

depth of the wells Pelzer drills is 150 feet. The deepest well he has drilled to date bottomed at a little over 250 feet.

A large map of the entire area he drills hangs on the wall of the small office in Pelzer's home. Small, numbered pins are inserted into the map at the exact spot where each well has been drilled. A card with a corresponding number is then placed into a file. The cards contain complete details concerning the particular well; what sort of ground conditions were encountered, time required for completion of the well, how much water was produced, etc. When he receives a request for a well job in a particular area, he checks the map for any wells he has drilled in that area. This has proved invaluable in helping him predict what conditions he is likely to encounter while drilling there. As he drills more and more wells, the map and card file will become more and more complete and, consequently, of greater value to him.

Just a little over a year has passed since Pelzer took his initial plunge into the drilling business. If the successes of this first year are any indication, he has finally found the work that can provide him with the independence, challenge and financial rewards he was seeking.

Income Tax...

(Continued from page 23)

the unrecovered cost or other basis, but this rate may not exceed twice the applicable straight line rate computed without regard to salvage. Salvage is not deducted in computing the basis for depreciation under this method, but no property may be depreciated below its reasonable salvage value.

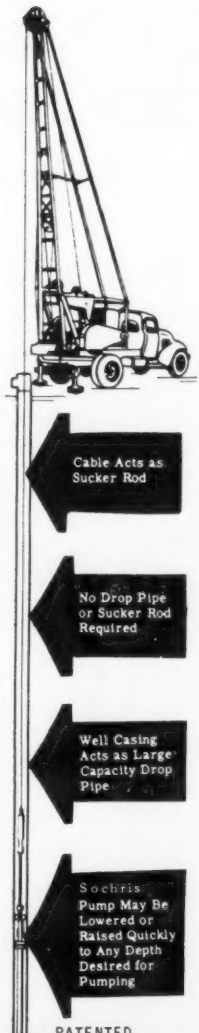
Sum of The Years-Digits Method

In this method, an annual allowance is computed by applying a changing fraction to the cost or other basis of the property reduced by its salvage value. The numerator of this fraction is the number of years remaining in the useful life of the property, including the year for which the computation is being made. The denominator of this fraction is a constant, equal to the sum of the digits representing the years in the useful life of the asset. (For example, an asset with a useful life of five years would give a denominator of 15 for this fraction — $1 + 2 + 3 + 4 + 5 = 15$).

The calculation of the depreciation allowance under each of the methods

SOCHRIS "WELL DRILLER'S PUMP"

SAVE TIME! LABOR! MONEY!


Cable Acts as Sucker Rod
No Drop Pipe or Sucker Rod Required
Well Casing Acts as Large Capacity Drop Pipe
Sochris Pump May Be Lowered or Raised Quickly to Any Depth Desired for Pumping
PATENTED

No drop pipe . . . No sucker rod needed . . . pump operates by cable from rig . . . automatically seals off casing . . . gives a real clean-out . . . and accurate capacity test . . . too.

You can set this pump and begin clean-out within ten minutes after you finish drilling.

Available for all casings 3" and up . . . capacities up to 15000 GPH.

Here's what one driller reports:

"The Well Driller's Pump we received from you some time ago has proven to be everything you said it was.

We test and clean wells from 70 to 300 ft. deep with the most astonishing ease, no pipe to let down and take out again, no rods to work with. Just screw the Sochris Pump into the rope socket lower it into the well and start pumping.

It would be hard to figure the exact saving in time and labor this pump saves. We certainly do not intend to be without one."

This pump widely used during past seven years . . and is fully guaranteed to give satisfaction.

Write for bulletin to

SOCHRIS DEVELOPMENT COMPANY

WILMETTE · BOX 82 · ILLINOIS

is illustrated by the following example. Assume that you acquire a new drill for $10,000 on January 1, 1958, which has a useful life of six years and negligible salvage value.

The tables on pages 22-23 show that the straight line method results in the recovery of capital investment in uniform increments over the life of the asset. The declining balance method gives a rapid recovery of the capital expenditure, with the highest amount recovered in the first year and with a gradually decreasing recovery thereafter. For example, for an asset with a 6-yr. life, 55½% of the basis will be recovered in two years, if the maximum permissible rate is used. This method, however, automatically leaves an unrecovered amount at the end of the last year, representing salvage value, which is not deducted in computing the basis for depreciation when using this method. If the asset actually has no such remaining value, the amount of any loss incurred may be taken as a loss in the year of final disposition, if the asset has been treated as a single item account. It will also be noted that the sum of the years-digits method gives a total cumulative basis recovery at the end of any year (except the last year) which is always greater than under the straight line method. Furthermore, where there is no substantial salvage value, the sum of the years-digits methods gives a greater cumulative depreciation allowance than the declining balance method, except during the early years. By choosing the proper method, a taxpayer can recover his capital investment at the desired rate. But it is again pointed out that the declining balance method (with a rate twice that of the straight line rate) and the sum of the years-digits method are available only to the first owner of a new piece of equipment. Other taxpayers are restricted to the straight line method or to the declining balance method with a rate not exceeding 150% of the straight line rate.

"I assume the lady was more than satisfied with the price we charged for drilling her new well."

History...

(Continued from page 17)

derrick and walking beam for actuating the drill tools, operated from a stationary engine mounted apart from the rig itself.

In 1831, Billy Morris invented jars and, during the next 50 years, free-falling, jointed steel rods were developed. Within this period many fishing difficulties were also overcome, causing the percentage of finished wells to rise accordingly.

Drill tool joints were originally made with a straight thread, a practice which caused these joints to taper from long, continued use and from

see for yourself

how a COOK well strainer prevents sand lock

It's easy to see why there's no sand lock in your submersible pump when you use a Cook wire wound well strainer. The exclusive V-shaped, self-cleaning slot is larger inside than outside eliminating the possibility of clogging and permitting the flow of water with a minimum friction loss.

Cook well strainers are available in red brass, American Everdur, Armco Iron or Stainless Steel; in as many different size slots as required. Eight to 24 hours delivery is often possible. Telephone Cincinnati HU 1-8800 for this service, or write for complete specifications.

World's Leading Name In Well Strainers

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GMC 6x6 NAMED ARMY'S BEST ALL-AROUND TRUCK!

UNUSED!
GUARANTEED! NEW-TRUCK PERFORMANCE!

- **Extra Pull Power!**
- **Double Traction for Mud!**
- **Special "Off Road" Design!**

From Government Storage—these all-wheel-drive GMC 2½ ton 6x6's were specially designed by the U. S. Army to take the roughest terrain in all kinds of weather. These unused 6x6's can do the same for you in all your truck jobs; whether in a muddy field or along a super highway.

Processed — by Memphis Equipment Company — down to the last bolt to assure you of receiving the finest unused GMC 2½ ton 6x6 trucks available today. Parts available anywhere in the nation.

For specifications, prices, delivery write, wire or phone collect
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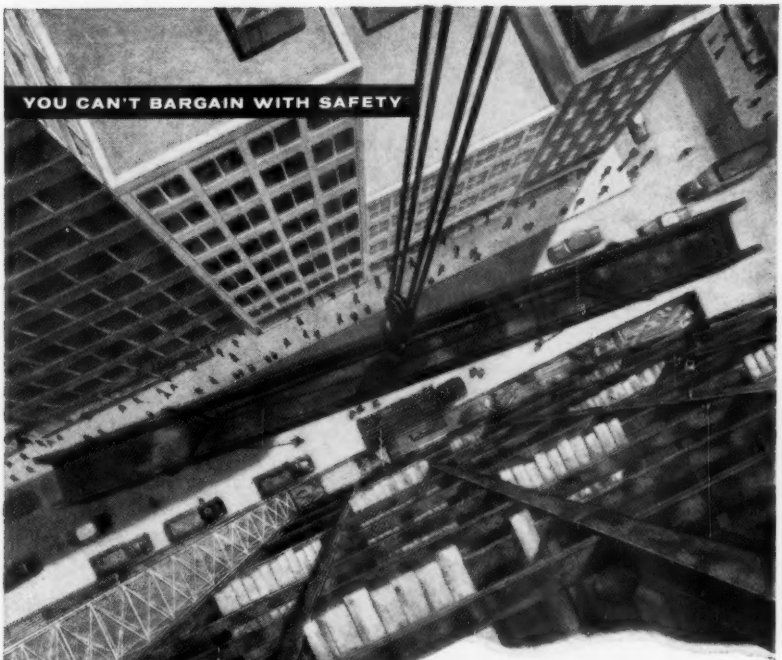
rechasing of battered threads. It was soon discovered that a tapered joint made a much stronger and more secure connection than the straight threaded joint. Early tool manufacturers differed among themselves as to how a tapered joint should be made, so there were about as many types of tapered joints as there were manufacturers. Standardization of tool and joint sizes was brought about by the founding of the American Petroleum Institute in 1919. American Petroleum Institute (API) standards are used today by manufacturers of these products.

In 1859, water well drilling received added impetus when the first *oil* well was drilled by Colonel E. L. Drake with an early-type standard rig near Titusville, Pa. This 69-ft. well created so much interest that rapid advancement was made in the use of drilling machines.

Many changes took place in the United States during the period following the Civil War. An ever-increasing number of settlers entered regions west of the Mississippi River — permanent settlers, who built homes, schools, and industries. Where early settlers had depended upon creeks and hand-dug holes for their water supplies, the newer immigrants turned to drilled wells, which were much cleaner, cheaper and faster to construct. Necessity called for inventive genius.

Events by this time were leading up to an important discovery. In 1867, Henry Kelly conceived plans for building a portable drilling apparatus, incorporating a principle which was eventually to revolutionize the water well drilling industry. The following year, he constructed the first such portable cable tool drilling rig in a



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Today, taller buildings, bigger bridges, deeper oil wells, greater construction projects require stronger, safer wire rope. And equipment operators know that when you buy "bargain" rope you're heading for headaches, trouble and expense. So don't bargain with safety. Buy wire rope on the basis of *quality*. Buy Wickwire Rope.

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small shop in Iowa. Commercial production began immediately by a company formed by the inventor—Kelly, Morgan and Co. The company was located in Osage, Iowa.

Twelve years later, the Downie brothers in Massachusetts brought out a portable steam drill rig. The main difference between the Kelly and Downie machines was the design and arrangement of the spudding beam. While Kelly's machine used a single pitman located in the center of the machinery, the Downie rig operated the spudding beam from double outside pitman arms. Manila cable was used on all these early drills.

In 1891, Henry Kelly became associated with O. B. Tanneyhill, carrying on the business of manufacturing and selling well drills under the same of Morgan, Kelly and Tanneyhill Co. When Kelly died in 1904, the firm name was changed to Armstrong-Quam Co., which in 1910 became the Armstrong Mfg. Co.

During the early part of the 20th century, steel products were so greatly improved that drilling with wire line came into use. Less friction of the new cable, plus longer life, resulted from the use of steel cable, but, since derricks were all "stiff legged" affairs, some provision had to be made for absorbing the shock of drilling tools. This was accomplished by using a 25 to 50-ft. length of manila line between the tools and steel cable, an arrangement called the "cracker"—familiar to all oldtimers in the business.

In its tenure as a manufacturer of drills, the Armstrong Mfg. Co. de-

(Continued on page 58)

NEW STA-RITE

AIR VOLUME CONTROL

ELIMINATES WATER-LOGGED TANKS

- Fits all tank sizes through 82 gals.
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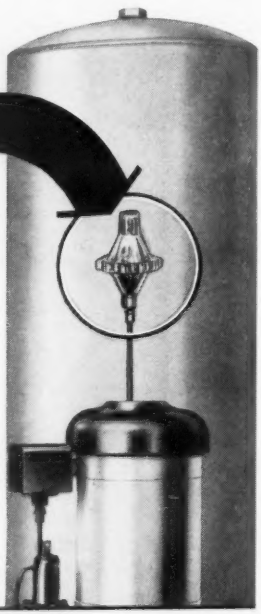
Now you can put this amazing air volume control on jet water systems you service. No diaphragms. No wearing parts. One control fits all popular tank sizes. Larger air capacity. Almost impossible to water-log tank. Costs no more than ordinary controls. Packaged complete with necessary tube and fittings. See your wholesaler or write:



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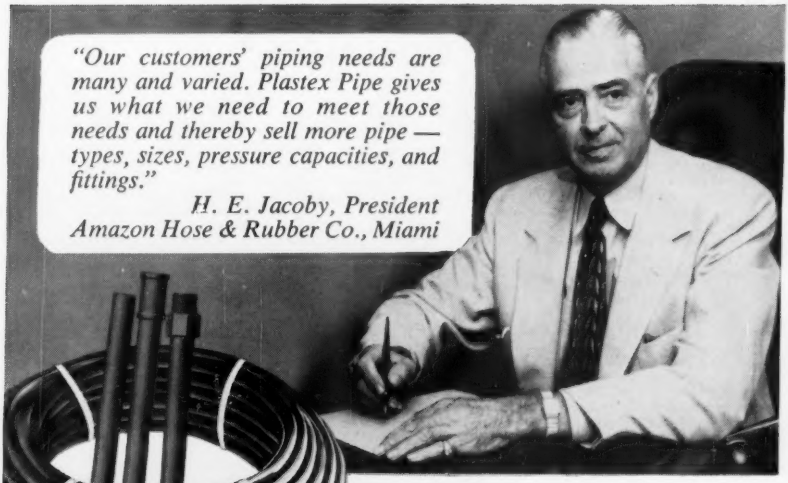
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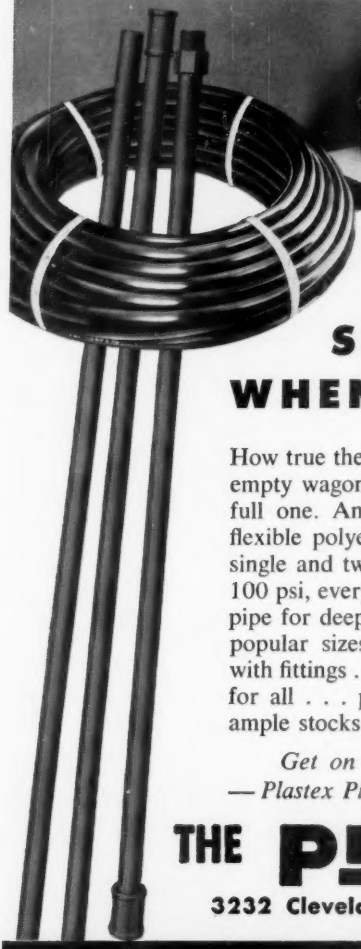
H. E. Jacoby, President
Amazon Hose & Rubber Co., Miami



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How true the adage "You can't sell goods from an empty wagon". Certainly, you'll sell more from a full one. And, Plastex gives you just that . . . flexible polyethylene pipe (Plastex or Trojan) in single and twin-tube types, pressure rated 75 and 100 psi, every wanted size . . . semi-rigid Kralastic pipe for deeper wells and pressures to 150 psi, in popular sizes, 10 and 20-foot lengths, plain or with fittings . . . a complete line of precision fittings for all . . . plus 12-hour shipment from always-ample stocks.

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DRILLS FOR SALE

1954 model 22-W drill, mounted on a 1950 Chevrolet truck with two-speed rear axle, casing reel spooling device and power derrick hoist. Cleaned and painted and in A-1 shape. Price: $4995.

New Bucyrus-Erie 20-W drill, complete with 700′ of 5/8″ drill line, 700′ of 3/8″ sand line and 130′ of 1/2″ casing line; mounted on a 1951 Dodge truck, all in A-1 shape. Contact R. R. Long Co. or L. J. Kessler, Troy, Mo.

1941 Model 22-W drill mounted on a 1947 International truck. Casing reel, spooling device and power derrick hoist. Cleaned and painted and in good shape. Price: $3500.

68-L drill, trailer mounted, with K-6 International tractor truck; trailer tires like new; casing struts, tool crane and lines. Cleaned and painted and in good shape. Price: $9250.

1954 model 60-L drill, 2 International winch trucks, 3 strings of tools and fishing tools, 3000′ of 3/4″ drill lines, 1000′ of sand lines, tool shed and many miscellaneous items too numerous to mention. Price: $20,000. Contact R. R. Long Co. or S. S. Oil Co., Springfield, Ill.

For all other items above, contact: R. R. Long Co., R.R. #1, Mound Rd., Jacksonville, Ill. Phone: CHestnut 5-2613

DRILLS FOR SALE

22-W Bucyrus-Erie drill, 1950 model, mounted on 1949 2½-ton Ford cab-over-engine truck. Complete set of tools for 3″, 4″, 5″ and 6″ work, including some fishing tools. One 2-wheel pipe trailer, one 150-gal. water tank mounted on 2-wheel trailer. All equipment in A-1 condition. Harry Holtz, Albert Lea, Minnesota. Phone: 7123.

For Sale: 1—Reverse circulation Kelly drill rig complete. 300′ 6″ drill stem. Bit adjustable 16—40″. Equipped with 110-volt light plant for 24-hour operation. Rig mounted on 1955 Chev. truck, COE. This rig has just been checked by factory mechanic. Less than one year old. Rig has done 3000′ drilling.

1—Reverse circulation drill complete. 190′ 6″ drill stem, 30—36″ bit. Full trailer mounted. Shop-built in 1955. A-1 condition. Also have water trucks and drill stem trucks available. LeRoy Seim, Irrigation Well Drilling, Chapman, Neb. Phone: 1402.

22-W 1948 model on GMC 6 x 6. 6-cyl. Hercules. 50 Keystone. 1948 model on GMC 6 x 6. Buda motor. Casing reel. Both with power derrick, tool guide and tower braces. Cables and tools if wanted. All in excellent condition. Rebuilt motors on both. Leonard Drilling Corp., White Marsh, Maryland. Phone: Edgewater 5-8310.

Failing 1500, $6500; Mayhew 1000, $5250; others, $4000, up. B-E 24-L 6, 8 and 10″ tools, Butane, $7500. Fred Butler, Box 481, Pueblo, Colo.

1950 Model 22-W with casing hoist and power derrick lift. Machine and motors recently overhauled and repainted and in first-class shape. Mounted on a very good late model Chevrolet truck with four-speed axle. Equipped with cable but no tools. Price: $4300.

20-W, two years old, like new. Mounted on a good International truck, equipped with casing hoist, self-starter and power derrick hoist. Price: $4300. B. L. Zander, Coulter, Iowa.

20-W, one-piece derrick with cables and some tools; new engine installed approximately one year ago; mounted on truck. Inquire Ed Kranz, 5214 W. Villard St., Milwaukee, Wis.

DRILLS FOR SALE

For Sale: 44 Cyclone spudder 6½″ to 10″ tools. New steel dog house, butane tank, small tools. Complete outfit good as new. Retiring soon; reason for selling. Clarence Bue, 1729 Virginia Ct., Owensboro, Ky. Phone: MU 3-8469.

1—Model 40 Cyclone water well drill. Machine is less than three years old, and has done very little work. Machine mounted on late model Studebaker 1½-ton truck. Truck and machine both in excellent condition. Priced to sell. Contact Howard Crowner, Moreland, Ohio.

Bucyrus-Erie 1-W, serial #114339, mounted on Dodge 6x6, purchased December 1956, like-new condition. Complete combination rig, jetting, cable, rotary and hollow rod tools. Contact Mr. R. Pelton, Pacific Testing Laboratories, 3220 17th Ave. West, Seattle, Washington. Phone GArfield 3610.

20-W Bucyrus-Erie purchased new in 1955 mounted on F-6 Ford truck with new truck motor. Drill equipped with casing reel, complete starting equipment, tool guide, spooling device, blower, new drilling and sand lines and steel cat walks. Complete outfit in excellent condition. Price: $4950.

1955 Chev ¾-ton pickup truck also in excellent condition at extra cost. Wayne Fischer, 155 Glass St., Suncook, N.H. Phone: HUnter 5-3745.

One 20-W Bucyrus-Erie machine, one year old, one-piece derrick, excellent condition, mounted on a 1951 Dodge with 2-speed axle; 500′ of 5/8″ and 500′ of 7/16″ cable and complete tools. Harvey Acker, Hales Corners, Wis. Do not write; phone ORchard 2-5667.

50 Keystone, good condition mounted on 10-wheel Army truck equipped with 600′ 3/4″ and 3/8″ cable and a complete line of 6″ tools. Ralph E. Myers, 249 Lee Park Ave., Wilkes-Barre, Pa. Phone: Va 2-5210.

36-L Bucyrus-Erie with HB Cummins diesel automatic spooling. Complete with all from 22″ down to 5½″, nearly complete set of fishing tools for all size holes and cordage. Write Box 1724 or call 9-3193 in Billings, Mont.

DRILLS FOR SALE

22-W Bucyrus-Erie drilling machine, equipped with rubber cushion sheaves, casing reel, power derrick hoist, cat heads, 36′ telescoping derrick, good drilling cable and sand-line; mounted on good Ford truck with good tires; entire rig and truck newly painted. Tools for 8″ and 6″ holes. This outfit is in A-1 condition, and ready to go. Price: $4250. Harry H. Fox & Sons, Route 6, Shelbyville, Ind. PHONE Waldron 4181.

20-W Bucyrus-Erie, purchased new late 1956; mounted on 1948 2-ton COE Ford truck with new motor. Drill equipped with complete starting equipment, tool guide, spooling device, casing reel, blower and complete tools and lines for drilling 6″ diameter wells. Excellent condition. Price: $6000. Eastern Drilling Co., 79 West St., Warwick, N.Y. Phone: 55-4127.

50 Keystone mounted on 6x6 International truck. Complete with 6″ drilling tools and cable.

31 Stone mounted on 1947 Ford truck. Complete with 6″ drill tools. All tools 2¼″x3¼″ API threads. Machines now working. Dave Ash, Lebanon, Tenn. Phone: 248.

Bucyrus-Erie 22-W drill for sale. Good condition. Price: $3500. Loy Garrison, Rt. #3, Alpharetta, Ga. Phone: 3606

Model 42-T, International diesel powered, crawler mounted, complete with drilling and fishing tools for 9″ holes. Good condition. Price: $5000. Albert Meckes, Gilbert, Penn. Phone: OVerbrook 12663 Gilbert, Pa. (near Stroudsburg, Pa.)

21-W drill mounted on 1951 Dodge 2-ton truck. 500′ each drilling and sand line. Price: $2250. Contact D.A.W., R. R. Howell Co., Minneapolis 14, Minn.

2—Star 55 drills, both 2½ years old, both on FWD 2½-ton trucks, each with 4″ tools and cable. Price each: $4850.

1—Star 71 drill, 40′ mast, on FWD 2½-ton truck, with cable, no tools. Price: $2500.

Midwest Well Drillers, 1501 Pratt Ave., Des Plaines, Ill. Phone VAnderbilt 4-1013.

50 Keystone special arranged most efficiently. On GMC 10 Wheeler. Priced right. In use daily in Pa. Box 710

For Sale: All steel Keystone rig, telescoping derrick, B-E shock, string of 5¾″ tools, truck mounted. Good lines and tools. Priced cheap. Willis Ramsey, 321 Michigan Ave., Monticello, Ky.

DRILLS FOR SALE

50 Keystone mounted on K-7 International truck. Drill equipped with 6-cylinder Continental gasoline engine, casing reel, tool guide, and complete tools and line for drilling 6″ wells. Approximately 3 years old. Price: $5000. H. E. Shirley, Stephenson, Va. Phone: MOhawk 2-8375.

For Sale: 20-W, about four years old, in first class condition and mounted on a good 1948 Ford truck. Price: $3300. B. L. Zander, Coulter, Iowa.

1—Portadrill #502 rotary drilling machine. Was new in June 1957—Has only drilled 4 wells approx. 500′ deep ea.—Equipped with: 4 x 8 Gardner Denver pump—double drum drawworks—7½″ opening in table—1200′ of new ⅜″ plow-steel sandline—800′ of 2⅞″ internal upset drill rod—all necessary subs 1—12¼″, 2—13¾″, 2—9⅞″, 2—7⅞″ Hughes & Grunner drill bits—1—4¾″ x 10′ drill collar-rig mounted on new 1957 Ford F-800 truck. Box 716

1950 #71 Speedstar drill, 40′ derrick, rubber-mounted sheaves, casing reel, catheads, electric starter, Red Seal Continental engine. 500′ cables. Mounted on 1948 KB7 International truck. Priced to sell. Sam Kramer, Weyerhauser, Wis. Phone: 12.

33-W B-E mounted on 1938 Diamond T truck, tools included. Price: $1800. R. F. Ziegenfuss. Phone: Pennington, N.J. 7-0580.

Model 501 Portadrill truck mounted rotary rig. Rated capacity 1500′ in 8″ diameters or larger diameters to shallower depths. Good 1954 Ford F-600 truck with two-speed axle. Gardner Denver pump. Reversible hydraulic pull-down. 650′ 2⅞″ drill rods, 15′ long. 1200 gal. water truck with two-speed axle. About 20 drill bits, tools, etc. Priced to sell. Box 717.

MISCELLANEOUS FOR SALE

1—Casing hook, regular, swivel type, 21-ton capacity. Price: $50.

1—Pair regular type casing elevators, 3″ standard pipe. Price: $35.

1—Reversible chain wrench, flat link, 4″ to 18″. Price: $45.

William Burow, Well Drilling Contractor, 1904 N. 75th Ave., Elmwood Park 35, Ill. Phone: GLadstone 3-8366.

MISCELLANEOUS FOR SALE

#8 Bucyrus-Erie bit dresser electrically driven for dressing 6″ and 8″ bits. Equipped with oil burning furnace, three rack quenching tank and pin cap for 2″ x 3″—8 OWS joints. Purchased new this year. A bargain at $3000. S & S Well Drilling Co., Jack Sanga, Eastford, Conn. Phone: WAlnut 8-3489.

22-W #92941—40′ derrick, casing reel, rubber sheaves, fan blower, spooling device, Hercules QXB engine, with starting equipment mounted on '46 model 2 ton Ford truck. Tools can be furnished to customer's specifications. Will price with or without tools.

20-W #81201—36′ derrick, Hercules IXA engine, starting equipment, fan blower, spooling device, mounted on 1941 GMC truck. Tools can be furnished to customer's specifications. Will price with or without tools.

1-W #114345—Piston pump, starting equipment, mounted on 1948 Chev. truck with jetting equipment for 2″ & 3″ wells. equipment for 2″ and 3″ wells. Will price with or without tools.

20-W #114349—36′ derrick, Hercules engine IXA, starting equipment, casing reel, spooling device, fan blower, mounted on 1948 International truck. Good as new. Tools can be furnished to customer's specifications. Will price with or without tools.

33-W #14378—36′ derrick, mounted on 1948 Ford truck. Tools can be furnished to customer's specifications. Will price with or without tools.

20-W #111982—36′ derrick, Hercules IXA engine, starting equipment, casing reel, spooling device, fan blower, mounted on good truck. Tools can be furnished to customer's specifications. Will price with or without tools. Hickory Well Supply Co., Inc., Hwy. 70 at 18th St., Place, S.W., P. O. Box 602, Hickory, N.C. Phone: 4125.

1—Main belt for 22-W, good as new. Price: $35. A & B Drilling Company, Box 182. Scobey, Mo. Phone: HUnter 7-2414.

4—Buda model K-428-6 cylinder 4⅜″ x 4¼″ gasoline engines with accessories. Special reduced price: $550 each, f.o.b. Guelph, Ontario, Canada. Bucyrus-Erie Co., South Milwaukee, Wis.

FORD MODEL JD-1025 GASOLINE ENGINE with radiator-flywheel, ring gear and starter. $200.

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Bucyrus-Erie Company, South Milwaukee, Wisconsin.

MISCELLANEOUS FOR SALE

Complete string of big hole tools with 8″—10″ and 12″ bits. Joints 2½″ x 3½″-7 API.

New: Universal Giant #101-AA clutch, shaft, sprockets, chain and drum.

Temper screw with clamps. 8″ and 10″ pipe with coupling. Reasonably priced. Alexander Blote, 13-14 River Road, Fair Lawn, N. J. Phone: SW 6-0570.

NEW SURPLUS ENGINES

For Sale at reduced price, Ford Models 239 and 317, also Willys 4FB enclosed power units with electric starter, generator, instrument panel and open flywheel or with clutch P.T.O. Write P.O. Box 337, Salem, Ohio, or phone EDgewood 7-8741 .

New pipe casing in stock: 3″, 4″, 6″, 8″, 10″, 12″. Reconditioned pipe casing in stock: 3″, 4″, 4½″, 5″, 6″, 8″, 10″, 12″. Cutting and threading facilities; attractive prices on request. H. Schwartz & Sons, 2235 North Bodine St., Phila., Pa., Garfield 6-6464.

MISCELLANEOUS FOR SALE

New and used pipe and casing. Tom's Well Driller Supplies, 933 Fern Ave., Reading, Pa. Phone: SPruce 7-6331.

500′ pocket-size water level indicator, complete, ready to use, one extra spud. Price: $20 P/Pd. C. Lutts, 705 Plaza, Ontario, Calif.

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POSITION WANTED

Driller available. 10 years experience on cable tool drills, 1 year on rotary drills. Has drilled holes 4 to 20″ in diameter through all types of formations. H. L. Rains, Macon, Ill. Phone: Ro. 4-3670.

Experienced cable tool driller. Wanted: top wages, plenty of work. Bucyrus-Erie 22-W equipment Box 713

HELP WANTED

Wanted to hire: An experienced distributor salesman to sell well drilling machines, tools and well supplies in the Wisconsin territory. Have an attractive offer for the right man. Box 714

Experienced, reliable cable tool driller for rock and screen work. Stewart Bros. Inc., P.O. Box 976, Schenectady, N.Y.

EQUIPMENT WANTED

Wanted: Used rotary well drilling machine. Eastern Pennsylvania. Box 715

History...

(Continued from page 54)

veloped and patented a unique device which eliminated the need for a cracker, and permitted steel cable to be attached directly to the drill tools. At first, the upper derrick section was mounted on a loop of manila cable to absorb shock, but this device was later replaced by a series of rubber-mounted shock absorbers in the derrick head. Swivel rope sockets also came into general use.

When Bucyrus-Erie Co. purchased the rights to manufacture the Armstrong line of drills in 1933, the trade name was changed to Bucyrus-Armstrong, a designation which remained until the Bucyrus name had become firmly established in the water well drill field. Around 1943, the trade name for the line of drills became Bucyrus-Erie.

In this same period, drillers were rapidly gaining knowledge in the geology of regions which they were commissioned to drill. As a result of geological know-how and, even more, of technical improvements, drillers were undertaking, without hesitation, drilling jobs which a few years before had appeared insurmountable.

It is interesting to note that, even though more than 5,000 wells were put down with crude appliances prior to 1868, the greatest progress in design and manufacture of drilling equipment and in water well construction methods has been made within the last 75 years. And, like the wells of Joseph and Jacob, today's systems mark an important point in the continuing advance of the industry.

"We've eliminated service calls by using durable pipe of Du Pont ALATHON® 25"

says **JOHN AND PAT LIBERG**, *Co-owners, Meadow Equipment Sales and Service Co., Lombard, Ill.*

"We've used flexible plastic pipe of ALATHON 25 for two years and found it to be the most durable and efficient pipe on the market. Service calls have been eliminated because we've never had a pipe failure or a customer complaint. This gives us more time for new installations. And pipe of ALATHON 25 is so easy to install that one man can handle most jobs alone and save us even more time."

ALATHON 25 polyethelene resin is extremely durable because it is virgin material specially formulated for pipe use. Pipe of ALATHON 25 resists pressures encountered even in deep wells. It will not weaken or deteriorate, even after long periods of contact with corrosive soil chemicals.

You, too, can get the quality pipe which assures customer satisfaction! Just make sure your next coil of plastic pipe bears the green tag with the words "Quality Pipe Made of Du Pont ALATHON 25 Polyethylene Resin."

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

It was probably about the time of Confucius (600 B.C.) that the Chinese, using the principle of free-falling weights, constructed and used the first-known percussion drill similar to the one pictured above. Wells drilled in this manner often took generations to complete. A history of well drilling up to the present time is contained in this issue.

The Driller

The monthly magazine for water well drillers

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